DOCUMENT RESUME

ED 131 590 88 EA 008 914

AUTHOR	Ellett, Chad D.
TITLE	Results Oriented Management in Education. Project R.O.M.E. The Continued Refinement and Development of the Georgia Principal Assessment System and Its Application to a Field-Based Training Program for Public School Principals. Assessment Design--Procedures--Instrumentation--Field Test Results. Final Report: Volume I.
INSTITUTION	Georgia State Dept. of Education, Atlanta.; Georgia Univ., Athens. Coll. of Education.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	76
NOTE	222p.; For related documents, see EA 008 915, ED 105 558, and ED 123 787-789
AVAILABLE FROM	Project R.O.M.E., 228 Fain Hall, University of Georgia, Athens, Georgia 30602 ($2.50)
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	*Administrator Evaluation; Elementary Secondary Education; *Evaluation Methods; Models; *Performance Criteria; *Principals; *Program Descriptions; Program Development; Tables (Data)
IDENTIFIERS	Elementary Secondary Education Act Title III; ESEA Title III; *Georgia Principal Assessment System

ABSTRACT

This publication is one of two companion volumes that describe processes, procedures, and products developed as parts of the Georgia Principal Assessment System (GPAS) and present the results of a test application of the GPAS to participants in a field-based training program for public school principals. This volume consists mainly of descriptive information related to the development and testing of the GPAS. Individual chapters focus in turn on the initial development and first field test of the GPAS, selection of a second set of performance indicators of principal competency, application of the GPAS to a field-based instructional program for principals, supplemental research activities related to the continued refinement and development of the GPAS, and parameters and uses of a prototype administration, scoring, and technical manual for the GPAS. (JG)

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RESULTS ORIENTED MANAGEMENT IN EDUCATION

Project R.O.M.E.

FINAL REPORT: VOLUME I

The Continued Refinement and Development of the Georgia Principal Assessment System and its Application to a Field-Based Training Program for Public School Principals

Assessment Design - Procedures - Instrumentation - Field Test Results

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EA 008 914

Georgia State Department of Education/Thomas County, Georgia

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1975-1976

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Project R.O.M.E. activities involving the University of Georgia are funded through a sub-contract with the Project R.O.M.E./ Thomas County, Ga., Board of Education office, which is funded pursuant to a grant under Title III of the Elementary and Secondary Education Act from the Georgia Department of Education. The project is administered in the Georgia Department of Education by the Division of Program and Staff Development.

ACKNOWLEDGMENTS

The Project R.O.M.E. staff at the University of Georgia gratefully acknowledges the many contributions made by students, teachers, central office personnel, and principals in the State of Georgia, in providing assessment data summarized in this document. Without their assistance and cooperation in field testing the assessment system, assessment goals most assuredly could not have been accomplished.

Contributions by various individuals within and outside of the University of Georgia were many and valuable. The assistance of personnel associated with the Educational Research Laboratory should certainly be recognized as should the many contributions of Dr. David A. Payne, R.O.M.E. Assessment Consultant. In addition, the data analyses completed by Tony Masters, Jonelle Pool, and Mark Perkins were essential to accomplishing assessment goals for the year. The clerical support of David McCoy is also greatly appreciated.

To members of the State Department of Education, Division of Program and Staff Development, and to Mr. E.R. Cone and John Clark, goes a special thanks for their continuing interest in and support of the R.O.M.E. assessment effort.

Finally, the expert secretarial skills and services of Jane Bradshaw, in bringing order out of chaos to the final manuscript, is greatly appreciated. Without her diligence, the production of such a large report might have been considerably delayed.

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FOREWORD

Competency-based education and performance-based certification continue as two of the most widespread movements in professional education today. Much has already been accomplished in the competency-based education of public school teachers. Both state departments of education interests and actions and legislative mandates in many states well indicate the influence and scope of the movement. While much has been accomplished in applying competency-based concepts to teachers, little has been done in the competency-based training and evaluation of school administrators.

One major effort pursuing the relationships between competency-based education concepts and the training of public school principals is Project R.O.M.E. (Results Oriented Management in Education)--a third year ESEA Title III research and development program supported by the Thomas County school system, Thomasville, Georgia, and the Georgia State Department of Education. Initiated by Thomas County school personnel during the Spring of 1973 as part of an ongoing Management By Objectives program, Project R.O.M.E. has been actively involved in the identification and development, professional verification, and validation of competencies and performance indicators for building level administrators in the State of Georgia.

The initial developmental phase of Project R.O.M.E. began in November, 1973 through a subcontract with the University of Georgia College of Education. During the 1973-1974 project year, major activities were concentrated in three broad areas: 1) the development of a list of competencies for building level administrators classified by major functional areas of administrative responsibility, 2) the development of a prototype instructional module for school planning activities, and 3) the development of an administrative assessment system for measuring competencies of public school principals. These initial project activities are described in six documents developed during the first year of the project:

1. Competencies for Building Level Administrators
2. The Assessment of Principal Competencies: System Design--Procedures--Field Test Results
3. Building Level Administrator Competency Development Module, title: Planning
4. Identification and Development of Competencies of Building Level Administrators of Thomas County, Georgia: A Project Report (2 Volumes)
5. A Handbook for Identifying and Developing Competencies of Building Level Administrators
6. Projected Development, Refinement and Assessment of Building Level Administrator Competencies: A Plan for Administrators

The major emphasis of the project during the second year was on research and development of a more comprehensive assessment system that could be utilized to both verify developed competencies and performance indicators in terms of their essentiality for the effective operation of a school program, and could, through field research, validate competencies against meaningful school outcome measures. During the 1974-1975 project year 338 competencies of school principals surviving a statewide verification survey were utilized in the development of a comprehensive competency-based assessment system which was field tested in approximately 45 schools in the State of Georgia. This first field test of the Georgia Principal Assessment System (GPAS), and subsequent data relating to the validation of competencies for principals against school mediating and outcome measures is described in three volumes:

1. The Verification and Validation of Principal Competencies and Performance Indicators: Assessment Design--Procedures--Instrumentation--Field Test Results Vol. 1, (Final Report)
2. The Verification and Validation of Principal Competencies and Performance Indicators: Data Appendices Vol. 2, (Final Report)
3. The Verification and Validation of Principal Competencies and Performance Indicators: Instrument Appendices Vol. 3, (Final Report)

As Project R.O.M.E. proceeded into yet another project year (FY 1975-76) two major components emerged. The first of these was the initial development and implementation of a field-based training program for 6th year certification credit for active school principals at Valdosta State College, Valdosta, Georgia. Operating under a subcontract to the Thomas County Schools and the Georgia State Department of Education, R.O.M.E. personnel in the department of educational administration at Valdosta State developed a prototype field-based competency training model for school princiapls. This training model was unique in that it incorporated as baseline data for each principal information derived from a Fall, 1975 preassessment with the GPAS developed at the University of Georgia. In addition, the GPAS developed and field tested during 1974-1975, was reapplied to each principal in the program. A description of the rationale, structure, and components in the Valdosta State training program entitled F.O.C.U.S. (Field Oriented Competency Utilization System) is available from Dr. Joseph Licata, Department of Educational Administration, Valdosta State College, Valdosta, Georgia. In addition, a report describing an internal evaluation of the F.O.C.U.S. program by the participants has also been produced.

A second component of Project R.O.M.E.'s third fiscal year was the continued refinement and development of the GPAS at the University of Georgia through the collection of an initial data base to be used for future competency validation research. R.O.M.E. assessment activities at the University of Georgia also included the pre- and post-assessment of F.O.C.U.S. participants in cooperation with Valdosta State College personnel.

This document and an accompanying Appendix volume describe the results of a pre and post application of the GPAS to participants in the F.O.C.U.S. training program. In addition, summary data derived from 10 schools for a second set of 273 principal performances to be used in future competency validation research is included, as well as a description of a prototype manual for administration, scoring, and use of the GPAS. Supplemental research activities using the R.O.M.E. data base completed during the 1975 - 1976 project year are also described. It is suggested that the interested reader will more fully understand the contents and nature of this report if generally familiar with the R.O.M.E. reports developed during the 1974 - 1975 fiscal year described above.

PREFACE

This document and an accompanying Appendices volume describe processes, procedures, and products developed by the University of Georgia Project R.O.M.E. Assessment staff during the 1975 - 1976 to:

1) select 273 performance indicators of principal competencies and develop a second set of principal competency assessment instruments.
2) provide data summaries for a second set of principal competency assessment instruments and other instruments within the Georgia Principal Assessment System (GPAS) derived from 10 schools in the State of Georgia to be added to a larger data base for competency validation research during the 1976 - 1977 project year.
3) apply the GPAS as a set of pre- and post-assessment instruments to participants in a field-based training program for public school principals implemented at Valdosta State College, Valdosta, Georgia during the Spring of 1976.
4) conduct research related to further instrument refinement and development and supplemental multivariate statistical analyses of selected instruments.
5) develop a prototype administration, scoring, and technical manual for a final form of the GPAS.

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Chapter I

AN OVERVIEW OF THE INITIAL DEVELOPMENT AND FIRST FIELD TEST OF THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM (GPAS)

From its beginning as a Title III sponsored research and development effort in the Fall of 1973, Project R.O.M.E. has continued to move towards accomplishing the long-range goal of designing a comprehensive set of assessment procedures that will measure competencies and performance indicators of public school principals in the State of Georgia. One of the unique aspects of this mission has been the emphasis placed on the validation of competencies against meaningful school outcome measures through field-based research, a task that goes beyond the many traditional attempts at competency selection that frequently halt with the "verification" of competencies as critical for the principalship by professionals in educational administration.

In keeping with the original objectives of the project, assessment staff at the University of Georgia have, during the past two project years accomplished the following: 1) identified and developed 885 performance competencies (statements of principal behavior), 2) classified these competencies in a bivariate classification schema, 3) subjected the classified competencies to two statewide surveys for professional verification by principals and other school personnel, 4) developed a first form of a competency assessment system (the Georgia Principal Assessment System), 5) validated a list of 338 high-priority competencies and performance indicators through a first field test of the GPAS in 45 public schools, and 6) initiated a revision of components of the assessment system for a second field test in 35 to 45 more schools in the future. These major developmental activities have been extensively described in the nine publications listed in the Foreword of this report and will only be briefly summarized in the sections that follow to provide the reader with conceptual continuity from one project year to the next.

Initial Development of Competencies for Principals

During the 1973 - 1974 project year, project staff at the University of Georgia identified approximately 3,600 to 4,000 statements of competencies, roles, duties, functions, and responsibilities of practicing school principals from a variety of research and professional sources. Using a bivariate classification schema developed within the project divided into seven Functional Areas of Administrative Responsibility (Curriculum and Instruction, Staff Personnel, Pupil Personnel, Support Management, School/Community Interface, Fiscal Management, and System-wide Policies and Operations) and six Administrative Operations (Data Collection, Planning, Decision-Making, Communicating, Implementing, Evaluating), and a system for grammatically structuring competencies into performance statements of principal behavior so as to reduce redundancy and maintain broad content, this larger list was reduced to a more manageable and meaningful set of 306 performance statements.

Once these competencies were synthesized from the much larger list and classified according to both Functional Areas of Administrative Responsibility and Administrative Operation, they were subjected to a statewide survey of practicing school principals and college and university CBE professionals for "verification" in terms of being frequently important for the effective operation of a school program. Included in this sample (N=155) were 40 principals judged as operating "exemplary" programs in given Functional areas, and 40 principals judged as operating "non-exemplary" programs in given Functional Areas.

Once data were returned from the judging groups involved in the verification survey, criteria were established that allowed for the selection of competency statements judged highly (9 on an 11 point scale) in overall mean rating by all judges, and that discriminated between "exemplary" and "non-exemplary" principals in the sample. These criteria resulted in the selection of 80 statements of principal performance from the larger set of 306 that were considered of high professional priority. These statements were not equally distributed within Functional Areas of Administrative Responsibility, with an extremely small number of statements representing Support Management and School-Community Interface functions, and a rather large number representing Student Personnel functions of the principalship. A somewhat surprising finding was that 48% (21) of the original 44 performance statements reflecting Curriculum and Instruction activities survived the selection criteria applied to the survey data. As regards the Administrative Operations classification of the competency statements, the operations of Data Collecting, Decision-Making, and Evaluating were somewhat under-represented relative to the original distribution of statements. The final set of 80 verified principal competency statements surviving this survey classified by Functional Areas of Administrative Responsibility is presented in Appendix A.

Development of Performance Indicators for 80 Verified Competencies

At the beginning of the 1974 - 1975 project year, R.O.M.E. assessment staff at the University of Georgia worked in conceptualizing a first form of a comprehensive assessment system that could be used to both measure levels of principal performance using a variety of instrumentation techniques, and to validate principal competencies and performance indicators against meaningful school outcome measures within a general field-test design. It was obvious that the 80 competency statements surviving the initial verification survey were too broadly inclusive of a variety of lower level performances to be useful in developing a comprehensive assessment system. Therefore, performance indicators further operationalizing each of the 80 competency statements had to be developed. This task helped in clarifying the specific dimensions of each of the 80 verified statements and facilitated the later development of assessment instruments.

Working with approximately 30 principals in a two-day objectives-based workshop, UGA R.O.M.E. assessment personnel generated between 1,100 and 1,250 raw indicator statements for the 80 verified competencies. The objective for workshop participants was simply to describe what specific behaviors an effective principal would exhibit in operationalizing the 80 competencies in his school. This large number of indicator statements was culled by assessment personnel for obvious duplication and ambiguity in phrasing, and was rewritten in a performance format reflecting the original 80 statements. Approximately 350 to 400 indicator statements remained after the considerable editing task.

Development of Functional Area Category Titles (FACTS) and Additional Competency Indicators

It was evident from the results of the workshop to generate competency indicators that much confusion was involved in principals' attempts to generate indicators for specific Administrative Operational terms included in each of the 80 competency statements. In addition, assessment personnel had great difficulty in classifying indicators according to the "operational" term (verb) reflected in each of the 80 verified competencies. Therefore, the behavioral term in each of the 80 competency statements was eliminated, and the general competency category resulting was termed a Functional Area Category Title (FACT) statement. This process resulted in a set of 80 phrases reading like more traditional descriptions of roles and responsibilities of the principalship. The revised set of 80 FACT statements is included in Appendix B.

Having changed the nature of the 80 verified competency statements to 80 FACTs, the indicator statements resulting from the workshop with principals were classified according to the administrative operations dimension of each statement. It was decided to include at least one indicator statement for each of the six administrative operations categories subsumed under each of the 80 FACT statements. This required the "in-house" generation of additional FACT indicators, and resulted in a list of 885 indicator statements subsumed under the 80 FACT phrases classified by Administrative Operations. A sample of a FACT statement and subsumed indicators is included in Appendix C. Combining the indicator development processes resulted in some FACTs having more indicators than others. However, each FACT had a minimum of six indicators, at least one for each Administrative Operation. A matrix summarizing the number of indicator statements classified by both Functional Areas of Administrative Responsibility and Administrative Operation generated through workshops with principals and by project staff is presented in Appendix D.

Statewide Survey to Verify and Select Performance Indicator Statements for Competency Assessment Instrument Development

Having developed 885 performance indicator statements classified by each of six administrative operations subsumed under 80 verified FACTs, a second statewide survey of 290 school principals (16% of state total) was undertaken by R.O.M.E. assessment personnel to prioritize and reduce this large number to a more manageable sum for the later development of assessment instruments. The general purpose of the survey was to obtain judgments from active school principals that would allow for the selection of indicator statements seen as highly desirable and/or essential and frequently occurring for the effective operation of a school program. These statements could then be used as initial content for competency assessment instrumentation and for validation research through large scale field testing.

Judgments about the indicator statements were obtained from a wide variety of principals and principal groups contacted throughout the State of Georgia during the late Fall and early Winter of 1974. The principals were requested to make two judgments about each indicator in terms of the indicator's Ideal Importance (Essential, Highly Desirable) and Frequency of Use (Very Often, Frequently, Rarely).

To reduce the number of indicators (885) to a more manageable sum for later instrument development, R.O.M.E. assessment staff established selection criteria such that a given statement was included if at least 90% of the survey participants judged a statement as either Highly Desirable and/or Essential for the effective operation of a school. These criteria served to reduce the 885 indicators statements to a high-priority subset of 338 performance indicators to be included as items for competency assessment instrumentation and later validation research. A summary of the number and percentage of indicator statements selected from survey data with these criteria is presented in Appendix E. Trends both similar and dissimilar to those seen in Appendix D are evident in the matrix in Appendix E, with Support Management and School-Community Interface Functional Area indicators receiving the lowest frequency of nomination by principals as either Essential or Highly Desirable for the effective operation of a school. As regards the Administrative Operations classification in Appendix E, it can be seen that Communicating activities (indicators) were judged as extremely important for the effective operation of a school. Relative to the first verification survey conducted by R.O.M.E. personnel for the original 306 competency statements, the Administrative Operations of Evaluating and Communicating increased from 8% to 32% and 3% to 44%, respectively.

Initial Development of the Georgia Principal Assessment System (GPAS)

Having selected 338 indicators of principal competence (performance statements) from a larger list of 885 utilizing judgments of active school principals, UGA assessment personnel developed competency assessment instrumentation for field testing within a validation paradigm previously explicated in the R.O.M.E. assessment model. The basic components and processes will only be briefly described below since they have been discussed in detail in the R.O.M.E. assessment documents listed in the Foreword of this report.[1]

The general validation paradigm for field testing the Georgia Principal Assessment System (GPAS) conceived of principal performances in the school setting impacting on variables mediating the school environment which subsequently impacted on school outcome variables. Three classes of variables were conceived within this design: INPUT VARIABLES (ratings of principals' competencies by a variety of sources), MEDIATING VARIABLES (student assessments of characteristics of the school climate/learning environment and teachers' job-related satisfactions), and OUTCOME VARIABLES (student achievement and school average daily attendance figures). A summary of these variables along with possible data sources is presented in Appendix F. The process of validating the 338 competency indicator statements against school mediating and outcome measures was one of compiling statistical relationships (correlations) between various variables within the general assessment design through large scale field testing of the GPAS.

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[1] The interested reader is encouraged to read the 1974-75 Project R.O.M.E. final report entitled The Verification and Validation of Principal Competencies and Performance Indicators: Assessment Design--Procedures--Instrumentation--Field Test Results

Before field tests could be undertaken, however, instrument development and selection for INPUT and MEDIATING variables took place. For INPUT variables, R.O.M.E. staff devised four forms of the Principal Performance Description Survey (PPDS) for: 1) teachers, 2) students, 3) the principal, and 4) an external observer. These PPDS forms allowed various data sources to provide input about the frequency and effectiveness with which principals carried out the verified competency indicators (performances) in their respective schools. Mediating variable measures consisted of the School Survey, a 14 factor instrument to assess teachers' attitudes towards dimensions of their working environment administered to all teachers participating in initial field testing; the Learning Environment Inventory (LEI), a 15 factor instrument to assess secondary student perceptions of characteristics of the school learning environment; and the My School inventory, a five factor instrument to assess elementary student perceptions of characteristics of school climate. These mediating variable measures were selected because of their known psychometric properties and widespread use in past educational research. The Input variable measures (PPDS forms) were developed by Project R.O.M.E. assessment staff by classifying the 338 verified performance indicator statements into their most logical data sources. School average daily attendance data was made available by schools participating in field testing the GPAS. Student achievement data for schools participating in field testing were made available through the Georgia Statewide Testing Program. The matrix in Appendix G summarizes the distribution of the 338 verified indicators by data source used in developing the Principal Performance Description Survey forms.

General Summary of Results of the Initial Field Test of the Georgia Principal Assessment System

During the Spring of 1975, R.O.M.E. assessment personnel conducted the initial field test of the Georgia Principal Assessment System to accomplish the following assessment goals: 1) to test the practicality and ease of instrument administration and scoring, 2) to collect data bearing on the multi-potential validity of the verified performance indicator statements, 3) to establish a large data base to be later combined with additional field test data for establishing norms for instruments within the GPAS design, 4) to establish item validity coefficients for all PPDS instruments for item deletion and instrument refinement, and 5) to test general theoretical assumptions made about relationships between classes of variables within the assessment design. The first field test was conducted with 45 principals, 1,200 teachers, 3,613 secondary, and 3,500 elementary students in 45 public schools in the State of Georgia. The 45 schools represented a wide variety of urban-rural differences and socioeconomic backgrounds.

The first field test of the GPAS involved the collection and analysis of approximately 1.5 million bits of information related to the general field test goals explicated above. A reiteration of findings from the 1975 GPAS field test here is prohibitive because of length. A more detailed discussion of the wide variety of results stemming from the initial field test of the GPAS in 45 public schools is described in three documents available from Project R.O.M.E. at the University of Georgia. While a detailed discussion of the findings is not presented here, some general statements can be made concerning what the first field test implied about the assessment system and principals' competencies. These findings are enumerated below in terms of global statements generally supported by past statistical analyses of data from the 45 (35 elementary and 10 secondary) schools.

1. Assessments of the competencies of elementary school principals showed the largest number of relationships to factors within and produced by the school. To some extent, this finding was due to the rather small secondary school sample of only 10 schools. However, the data did suggest that there are some obvious differences between the competencies needed by elementary and secondary school principals for effective school leadership. Of interest here, was the finding that Curriculum and Instruction competencies related to more school factors for elementary principals, while Pupil and Staff Personnel competencies were more outstanding (important) for secondary principals. More definitive conclusions concerning subsets of competencies for elementary and secondary principals should be forthcoming with the addition of more secondary schools to the sample during the present and future years.

2. The effectiveness with which principals are seen as performing a wide variety of competencies is more strongly related to other school variables than the mere frequency with which they perform tasks. Both kinds of ratings were obtained for each verified competency from a variety of data sources (e.g., teachers, students, an external observer, and the principal himself) and were subsequently related to school mediating and outcome variables. The analyses indicated that the effectiveness with which principals perform a variety of tasks is a more important dimension of job performance than the mere frequency with which they perform tasks. This implies that the simple "doing" of many things does not sufficiently impact on the total school setting in the absence of effective performance. Said another way, if principals per-

form a variety of tasks in carrying out school leadership responsibilities, the effectiveness with which they are rated as doing so shows high relationships to many other factors in the ongoing school environment. This finding has implications for both future R.O.M.E. assessment strategies, and for the development of a competency rating schema useful to local systems.

3. Teacher ratings, as opposed to student, principal, or external observations of competencies were by far the most valid predictors of school outcomes. That is, when a variety of sources are utilized to assess competencies, ratings offered by teachers show the strongest and most consistent relationships to other factors within the school, particularly their own (teachers') attitudes towards various dimensions of their working environment. This finding is important because it establishes teachers as a highly viable source for future competency assessment systems for principals, and supports the importance of the relationship between principals' performance of competencies and teacher attitudes towards their work experience and the general school context.
4. Principals were the poorest source of information about their competencies in that their self-ratings showed almost no relationship to other factors within the school. This is attributed to their overall high competency ratings relative to other rating sources for both the frequency and the effectiveness with which they performed tasks. This finding might be partially attributed to the "evaluation apprehension" that some principals felt by participating in the project, though the committment was made and kept that their data was essentially anonymous and would not be shown

to others (e.g., the superintendent). This finding is important because many "competency-based" systems depend strongly on the principal's own self-evaluation data for training needs, etc. It may be that principals should only be viewed as a secondary, and somewhat non-important source in competency assessment systems. It is not suggested that principals be eliminated altogether from future administrations of the GPAS, however, since their self-assessment profiles might well be contrasted with those of other sources (e.g., teachers) for needs assessment and discrepancy analysis purposes. The finding, for example, that large discrepancies exist between one's (a principal's) own self-ratings of competencies and those of others has much informational value.

5. Several outcome variables were used within the GPAS design as criterion (mediating and outcome) variables against which assessments of principals' competencies were to be compared. The most predictable measure (the instrument showing strongest relationships to competency assessments) was the School Survey instrument which allows teachers to express their feelings and opinions about 14 different characteristics of the school setting. The next most predictable criterion variable was school average daily attendance. These data imply that a principal functioning in the school setting has the most probable impact on teacher attitudes and other variables related to the "holding power" of the school. Thus, principals' direct impact on students is seemingly "mediated" by their impact on teachers, who in turn influence students.

When all criterion variables within the GPAS were considered together, student assessments of the quality of the school climate/

learning environment, and teachers' evaluation of dimensions of their work experience and the school showed the strongest (most predictable) relationships to princpals' competencies. Student Achievement data *did not* show very meaningful relationships to principals' competencies.

6. The original classification of competencies in Project R.O.M.E. was two dimensional. A particular competency statement was seen as reflecting both an *Administrative Operation* and a *Functional Area of Responsibility*. When these statements were aggregated into competency "clusters" representing various Responsibilities and Operations, the Functional Areas classification (e.g., Curriculum and Instruction, Staff Personnel, Pupil Personnel, Support Management, etc.) showed the best relationships to other variables within the school. The data indicated that performance in the areas of Curriculum and Instruction, Fiscal Management, and Staff Personnel combined with Implementing (actually carrying out performances or "doing") and Evaluating have the most potential impact on the school setting. This finding may be quite valuable in establishing training programs for principals based on the competencies representing these "clusters." That is, if one were to train principals (through local staff development programs or other means) in order to increase their competence in "critical areas" (those having the greatest likelihood of affecting the school) these competency areas would be suggested as a beginning point. Teaching a principal to *effectively implement and evaluate Curriculum and Instruction activities in his school* would seem a priority for competency-based training programs.

Several general statements related to the totality of variables and analyses conducted as part of the GPAS initial field test can be made. These findings are based on a close examination of the relationships "running through" the patterns of correlations between various instruments used to date.

a. There is a general tendency for positive teacher attitudes towards the school, and higher student achievement to be associated with students' reports of a low frequency of interaction with the principal. This implies that in schools where teacher attitude is positive and high, and student achievement is also high, things are progressing well within the school, and the necessity of student-principal interaction is at a minimum. It might be expected then, that in low achieving schools, teachers have generally poorer work attitudes, and principals have a great deal more interaction with students. This may imply that principals performing in low achieving schools should give some priority to their competencies in the Staff Personnel and Pupil Personnel areas.

b. The finding above (a) seems supported by other field test results. For example, the data indicated that students' satisfaction with the general school climate/learning environment, and their perception of school "easiness" is associated with a report of not generally interacting with the principal. If things are progressing well within the school, a principal seemingly does not frequently interact with students from the students' viewpoint.

c. Teachers, both elementary and secondary, see the majority of dimensions of their attitudes towards the school environment and working experience as strongly related to principals' competencies in a wide variety of areas. The results were so strong in this regard, that almost any conceivable area and classification of principals' competencies and performances is seen by teachers as relating to how they (teachers) feel about the school. This lends strong support to what many have often inferred from casual observation, that the principal-teacher "relationship" is very important.

d. Teacher attitudes as measured by the School Survey showed very high relationships overall to elementary student test performance on the subtests of the Iowa Tests of Basic Skills, and to Average Daily Attendance for the total sample. Apparently high ADA and student achievement go "hand-in-hand" with teachers who have a high regard for the school, its programs, its environment, and policies of the system and school board. While no analyses have been done as yet controlling for student variables such as socioeconomic status, ability, etc., in Project R.O.M.E., it seems evident that students will most likely prosper in school environments where teacher morale is high.

e. Unlike teacher attitudes, student assessments of characteristics of the school climate/learning environment showed only moderate relationships to the outcome variables of school achievement and average daily attendance. When combined with the finding above (d), it appears that teacher attitudes may be more important predictors of students' success in school than students' attitudes. The simple case may be, that in the sample of 45 schools examined to date, student achievement varied considerably more than students' attitudes towards characteristics of the school environment, resulting in only moderate relationships between these two variables.

In summary, the process of developing and field testing a competency-based assessment system in the public school setting yielded some interesting, practical, and important results. With the addition of data related to another 273 competencies and performance indicators during the 1976 - 1977 project year, a final form of competency assessment instruments should evolve based on item validity coefficients established through field research. A final form of the GPAS will include only those competencies and performance indicators having known and meaningful relationships to school mediating and outcome variables. Such a system should offer many advantages over the variety of instruments currently available for assessing the principal's role in relationship to other variables in the school organization. When combined with other kinds of information, competency assessments should allow for a more specific description of principals' needs in terms of on-the-job performance.

Chapter II

THE SELECTION OF A SECOND SET OF PERFORMANCE INDICATORS OF PRINCIPAL COMPETENCY AND DESCRIPTIVE DATA SUMMARIES FOR VARIABLES IN THE GPAS FOR 10 SCHOOLS IN THE STATE OF GEORGIA

One of the major tasks for R.O.M.E. assessment personnel during the 1975 - 1976 project year was the collection of data relevant to a second set of performance indicators of principal competencies. This section of the report describes processes used in 1) selecting an additional set of 273 competency indicators from the original, larger list of 885, 2) assigning these statements to their respective Principal Performance Description Survey (PPDS) instruments, and 3) collecting and analyzing data in 10 schools in the State of Georgia. The general purpose of this effort was to establish a data base to be combined with data to be collected during the 1976 - 1977 project year for a second validation of principal competencies and performance indicators against the school mediating and outcome variables discussed in Chapter I of this report.

Processes Used in Selecting a Second Set (1975-1976) of Principal Competency Indicators and Developing PPDS Instruments - Form II

It will be recalled that R.O.M.E. assessment personnel conducted a statewide survey with 290 practicing school principals (1974-1975) in order to professionally verify a large list (885) of principal performance statements in terms of their essentiality for the effective operation of a school program. Resulting from this survey were 338 high-priority statements used in the initial development and field test of the GPAS in 45 schools. Owing to the failure of some of the 338 items to demonstrate significant validity coefficients (correlations with mediating and outcome variables), and the need for the addition of new items for a second field test of the GPAS, 273 more principal performance indicators were selected for additional validation research.

The original 338 performance statements were selected if 90% or more of the principals surveyed rated a particular statement as either essential and/or highly desirable for the effective operation of a school program (Ideal Importance). These 338 indicators were then classified as to logical data source to develop first forms of the Principal Performance Description Survey (PPDS) instruments representing Input variables within the general GPAS validation design. Resulting were PPDS instruments for teachers, students, and external observer, and the principal himself.

During the 1975 - 1976 project year, an additional 273 indicator statements were selected based on the 1974 - 1975 statewide survey data. In order to select a manageable number of statements from the remaining 547 (885 minus the first 338 previously selected = 547), the decision was made to include an indicator in the next set if it had been rated by at least 70% of the principals surveyed as either essential and/or highly desirable (30% desirable or less). These criteria resulted in a list of 361 performance statements, a number considered still too large and unmanageable for field testing. Therefore, the 361 statements were reduced in number by approximately 24% by eliminating the lowest rated indicators by Operation within Functional Area.

In reducing the 361 indicator statements to a more manageable sum, consideration was given to achieving a balanced distribution of indicators for the seven Functional Areas of Responsibility and six Administrative Operations in the original classification schema for the various PPDS forms. A listing of the 361 indicator statements resulting from the application of the 70% criterion by Administrative Operation within Functional Areas of Administrative Responsibility is presented in Appendix H. Each Statement is classified as to possible data source, is ranked ordered on the basis of the survey results (30% desirable or less), and is coded by FACT classification used in generating the larger, original list of 885 indicator statements. In addition, items asterisked represent those selected for the second set (1975 - 1976) of PPDS forms.

A summary distribution of the 273 performance indicators selected using these processes for each PPDS form classified by Functional Area of Administrative Responsibility and Administrative Operation is presented in Table 1.

Inspecting the data in Table 1, it can be seen that the total number of items on the various PPDS forms varied according to appropriate data source. The Teacher, Principal, and External Observer PPDS Froms consisted of 120, 273, and 141 items respectively. It might be noted that 12 items were selected for the PPDS - Student Form but were not classified according to Functional Area or Administrative Operation. The row totals indicate the total number of inputs (ratings) about principals' functioning in the various Functional Areas and Operations across PPDS instruments, yielding a grand total of 534 item ratings each for frequency and effectiveness of performance rating scales. The 12 student PPDS items are excluded from this total. Viewing the various item classification categories, the Functional Areas of Support Management and School-Community Interface and the Administrative Operations of Communicating and Decision-Making were somewhat under-represented relative to the number of items in other classifications. This most likely reflects the distribution of the original 885 performance indicator statements within operation and functional area as well as the emphasis placed on various categories by principals participating in the 1974 - 1975 statewide verification survey.

Once the 273 items meeting the 70% selection criteria were classified according to most logical data source, they were randomly assigned to their respective PPDS Forms. Resulting from this process was a second set of PPDS instruments to be used in later field testing of the GPAS. Complete copies of the second forms of the various PPDS instruments and their respective rating scales and instructions can be found in Appendix I.

TABLE 1

Distribution of Principal Performance Indicator Statements Selected for Second Set (1975-1976) of PPDS Forms by Functional Areas of Responsibility and Administrative Operations*

	SOURCE			
Functional Areas of Responsibility	Teacher	Principal	External Observer	Total
1. Curriculum and Instruction	39	69	28	136
2. Staff Personnel	38	57	16	111
3. Pupil Personnel	22	83	53	158
4. Support Management	3	8	5	16
5. School-Community Interface	1	9	8	18
6. Fiscal Management	8	25	17	50
7. System-wide Policies and Operations	9	22	14	45
TOTAL	120	273	141	534
Administrative Operations				
1. Data Collecting	22	51	27	100
2. Planning	31	56	24	111
3. Communicating	19	34	10	63
4. Decision-Making	6	31	25	62
5. Implementing	35	56	16	107
6. Evaluating	7	45	39	91
TOTAL	120	273	141	534

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*12 PPDS - Student Form items were selected but not classified according to Functional Area of Administrative Responsibility or Administrative Operation.

School Sample and Field-Test Procedures

Having developed a second form of the various PPDS competency assessment instruments, project staff identified a cooperating school district to serve as the initial data base for future validation of the additional 273 principal performance indicators. This school sample consisted of 10 schools (6 elementary and 4 secondary) in a relatively small, rural system in Northeast Georgia. In keeping with the first (1975) field-test of the GPAS, data were collected from the following sources: all teachers in each of the 10 schools; all fourth-grade students in elementary schools; all eighth and/or eleventh-grade students in secondary schools; and each school principal. This data collection design was implemented so as to be consistent with the existing GPAS data base, and because of the availability of student achievement data from the Georgia Statewide Testing Program for grades 4, 8, and 11. Within the total school sample, data were collected for each instrument in the GPAS (both Input and Mediating measures) from 10 principals, 255 teachers, 1,200 elementary students, 1,003 secondary students, and 10 external observations in 10 schools. These data were collected in late April and early May of 1976.

In order to proceed in as efficient a manner as possible, and to be most conserving of school time, a team of data collectors administered instruments with the assistance of school personnel (e.g., school librarians). Student information was collected in large groups within particular schools during the regular school day. Student instruments (LEI, My School, PPDS-Student Form) required approximately 45 minutes to administer. R.O.M.E. staff members administered the PPDS-EO form to each principal at approximately the same time as student data were collected. All other instruments in the GPAS (PPDS-Teacher Form, the School Survey, and PPDS-Principal Form) were administered on a "take-home" basis with provision for adequate return deadlines. Teachers in each school were requested to return their instruments to the school librarian in the sealed envelope provided to insure anonymity.

Summaries of Descriptive Statistics for Variables in the GPAS Derived from 10 Schools

For practical reasons and for ease of final reporting, the results of the initial field testing of a second set of PPDS forms in the 10 schools described above will be presented in terms of total sample statistics rather than by individual schools within the system. Data are presented below for composite school means and standard deviations (e.g., the mean of school means) for Input and Mediating measures. Comparisons with "normative" data derived from the 1975 field test of the GPAS are provided for school mediating measures (i.e., the LEI, My School, and School Survey instruments). Item statistics are provided only for the PPDS-Student Form instrument since these items were not classified according to Functional Areas of Administrative Responsibility or Administrative Operation. Detailed interpretation of the descriptive statistics is intentionally avoided, though extreme characteristics in the data are noted.

INPUT VARIABLES: PPDS FORMS II

Results of PPDS-Teacher Form Administration

Performance ratings for the 120 items of the PPDS-Teacher Form were available from a total of 255 teachers in the sample of 10 schools. Items were aggregated into total scores for each of the Functional Areas of Administrative Responsibility and Administrative Operations categories by summing the total ratings for frequency and effectiveness rating scales. Summaries of "composite" school means for frequency and effectiveness of performance ratings for subscales of the PPDS-Teacher Form are presented in Tables 2 and 3 respectively. The number of items comprising each sub-scale can be found in parentheses fol-

TABLE 2

Summary of Composite School Means for Frequency Ratings of Sub-scores from the *Principal Performance Description Survey - Teacher Form* Derived from 255 Teachers in 10 Schools

	FREQUENCY SCORES*			
PPDS - Teacher Form Sub-scales Functional Areas of Responsibility	$\overline{X}$	S.D.	$\overline{X}$ as % of Maximum Possible Score	Average Item Rating
1. Curriculum and Instruction (39)[1]	75.75	40.93	39	1.94
2. Staff Personnel (38)	83.20	37.71	44	2.19
3. Pupil Personnel (22)	40.57	23.67	37	1.84
4. Support Management (3)	6.39	4.05	43	2.13
5. School-Community Interface (1)	2.50	1.46	50	2.50
6. Fiscal Management (8)	14.66	9.07	37	1.83
7. System-wide Policies and Operations (9)	18.35	10.57	41	2.04
Administrative Operations				
1. Data Collecting (22)	40.96	22.55	37	1.86
2. Planning (31)	61.23	32.42	40	1.98
3. Communicating (19)	40.77	20.10	43	2.15
4. Decision-Making (6)	12.90	7.52	43	2.15
5. Implementing (35)	70.14	35.93	40	2.00
6. Evaluating (7)	12.41	7.13	35	1.77

*Item ratings used: 1=Never..., 5=Very Often

[1] Number of items on sub-scale

TABLE 3

Summary of Composite School Means for Effectiveness Ratings of Sub-scores from the Principal Performance Description Survey - Teacher Form Derived from 255 Teachers in 10 Schools

PPDS - Teacher Form Sub-scales Functional Areas of Responsibility	EFFECTIVENESS SCORES*			
	$\bar{X}$	S.D.	$\bar{X}$ as % of Maximum Possible Score	Average Item Rating
1. Curriculum and Instruction (39)[1]	65.70	46.32	34	1.68
2. Staff Personnel (38)	77.59	42.51	41	2.04
3. Pupil Personnel (22)	36.39	26.48	33	1.65
4. Support Management (3)	5.89	4.47	39	1.96
5. School-Community Interface (1)	2.37	1.83	47	2.37
6. Fiscal Management (8)	13.56	10.00	34	1.70
7. System-wide Policies and Operations (9)	16.61	11.56	37	1.85
Administrative Operations				
1. Data Collecting (22)	37.31	25.67	34	1.70
2. Planning (31)	56.21	36.78	36	1.81
3. Communicating (19)	37.91	22.43	40	2.00
4. Decision-Making (6)	12.19	8.27	41	2.03
5. Implementing (35)	63.27	39.69	36	1.81
6. Evaluating (7)	11.22	7.94	32	1.60

*Item ratings used: 1=Ineffective..., 5=Very Effective

[1] Number of items on Sub-scale

lowing each sub-scale name. The mean scores across sub-scales are not directly comparable owing to the presence of different numbers of items comprising various scales. A ratio was therefore formed of the mean score to the maximum possible score (number of items on a sub-scale multiplied by 5) to yield a percentage score which could be used to make both absolute (against a standard of 100%) and comparative (across sub-scales) interpretations. In addition, an average item rating was derived by dividing the mean sub-scale score by the number of items comprising a particular sub-scale. For any particular sub-scale, an average item rating of 2.50 for either frequency (Table 2) or effectiveness (Table 3) ratings represents a "neutral" rating coinciding with a percentage maximum possible score equal to 50.

The data summarized in Tables 2 and 3 show no outstanding trends in terms of large discrepancies in ratings between particular PPDS-Teacher Form sub-scales for either the frequency or effectiveness of performance ratings. There was a slight tendency in this sample of 10 schools for teachers to rate the frequency with which principals performed the various indicators slightly higher than the effectiveness with which they performed the same indicators. Since only one of the sub-scale scores reached a percentage maximum possible score of 50 (frequency rating for the School-Community Interface item), it might be concluded that teachers rated these principals somewhat low as regards the specific items and composites comprising the PPDS-Teacher Form (II) instrument.

While this PPDS-Teacher Form is not directly comparable to the first form used in the 1974-1975 field test of the GPAS in 45 schools, percentage of maximum possible scores for the first form of the teacher PPDS were considerably higher on the average for all of the performance indicator classifications (composites). While difficult to draw definitive conculusions from a comparison between the two PPDS-Teacher Form instruments, it may be that teachers are generally more critical of principals' performances comprising the second form of the teacher competency assessment instrument. Alternatively, it may be that the second set of items selected for the PPDS-Teacher Form (II) will not yield scores generally as high as the first form because they were selected by lowering the verification survey criteria to performances seen by 70% of the surveyed principals as either essential and/or highly desirable. It is reasonable to expect, for example, that performances rated as lower in priority for the effective operation of a school by principals themselves, yield generally lower frequency and effectiveness ratings by teachers. If the data presented for the 10 schools in this sample is unique to these schools, it can be predicted that average composite scores for the PPDS-Teacher Form (II) instrument will increase as the sample increases (35 to 40 more schools) during the 1976 - 1977 project year.

Results of PPDS - Student Form Administration

Performance ratings for the 12 items comprising the PPDS - Student Form (II) instrument were collected from 1,200 students in 6 elementary schools and 1,003 students in 4 secondary schools. Secondary students consisted of grades 8 (2 schools) and 11 (2 schools). Because of the grade structure of the schools in this particular sample, elementary students represented grades 3 (1 school), 4 (3 schools), and 6 (2 schools). All students within these grades for each school were administered the PPDS - Student Form (II) instrument in group settings.

For the 12 items comprising the PPDS - Student Form (II) instrument, both frequency (How Often My Principal Does Things) and effectiveness (How Well My Principal Does Things) ratings were obtained. Copies of the elementary and secondary forms of the PPDS - Student Form (II) instrument can be found in Appendix I. The instrument was administered orally to elementary students to control for reading difficulty. In addition, students were instructed to omit ratings for any particular principal's performance not observed.

A summary of composite school means and standard deviations for both frequency and effectiveness ratings of items comprising the PPDS - Student Form (II) instrument administered to elementary students in 6 schools is presented in Table 4. For the frequency of occurrence ratings, item 2 (My Principal Tells Me To Try To Do Things In My Class That Help Me Learn) had the lowest mean rating (1.36), and item 11 (My Principal Makes It Easy For Students To Tell Him/Her About How They Feel About Things) had the highest mean rating (2.48). Considering all 12 items, eight items yielded close to, or above average, scores on the 3-point rating scale used to obtain frequency ratings.

For the effectiveness of performance ratings, item 3 (My Principal Talks With Me About What I Want To Learn In School) received the lowest mean rating (1.38), and items 4 (My Principal Plans A Special Meeting To Honor Outstanding Students) and 10 (My Principal Tells Students When They Are Being Good And Doing Things Right) received the highest mean ratings (2.67 and 2.66 respectively). Apparently elementary students in this sample perceive their principals as effectively honoring student achievements (item 4) and providing direction for behavior (item 10). Considering all 12 items for the effectiveness of performance rating scale, 9 yielded mean ratings above a midpoint of 2.00 on the scale, supporting these elementary students' positive perceptions of the effectiveness with which their principals performed these tasks.

In comparing the two rating scales (frequency and effectiveness) for elementary students, there was a tendency for the effectiveness ratings to be somewhat higher overall than the frequency ratings. In viewing individual items in terms of the mean ratings for both the frequency and effectiveness scales, several items (3,4,6,10,12) show significant discrepancies in mean item ratings, with either the frequency or effectiveness rating significantly higher in value.

TABLE 4

Summary of Composite School Means and Standard Deviations for Elementary Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators (n=1,200 students in 6 elementary schools)*

	Frequency of Occurrence		Effectiveness of Performance	
PPDS - Student Form Items	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1. My principal talks with me about things I like to do.	1.48	0.61	1.83	0.77
2. My principal tells me to try to do things in my class that help me learn.	1.36	0.59	1.80	0.75
3. My principal talks with me about what I want to learn in school.	2.23	0.75	1.38	0.56
4. My principal plans a special meeting to honor outstanding students.	1.85	0.73	2.67	0.61
5. My principal tells students about their responsibilities and privileges (rights) at school assemblies.	2.38	0.70	2.00	0.74
6. My principal asks me what I think about the special student activities in my school.	1.72	0.75	2.36	0.79
7. My principal tells students in my school about the special achievements of good students.	1.97	0.77	2.14	0.77
8. My principal tells students who misbehave about school rules.	1.94	0.80	2.28	0.79
9. My principal tells students who misbehave about how they bother other students.	2.35	0.73	2.07	0.71

TABLE 4 (continued)

PPDS - Student Form Items	Frequency of Occurrence X̄	Frequency of Occurrence S.D.	Effectiveness of Performance X̄	Effectiveness of Performance S.D.
10. My principal tells students when they are being good and doing things right.	2.15	0.77	2.66	0.64
11. My principal makes it easy for students to tell him/her about how they feel about things.	2.48	0.69	2.27	0.74
12. My principal gives special awards to students or classes with good attendance.	1.96	0.82	2.49	0.73

*Each item was scored on a 3 point scale with an assumed neutral point mean rating equal to 2.00

Summaries of composite means and standard deviations for the PPDS-Student Form (II) instrument administered to 1,003 students in 4 secondary schools are presented in Table 5. Average scores for each PPDS item are presented for both frequency of occurrence and effectiveness of performance ratings. For the frequency scale, the lowest rated item was item number 2 (My Principal Tells Me To Try To Do Things In My Class That Help Me Learn). The highest rated item for the frequency scale was item 3 (My Principal Talks With Me About What I Want To Learn In School). In considering all 12 items, 4 had mean frequency ratings approximating or above the middle of the four-point rating scale used (2.5). The grand average item rating was 2.06, representing secondary students' perceptions of their principal as relatively infrequently performing these tasks.

For the effectiveness of performance ratings for secondary students, the highest mean rating (2.91) was for item 4 (My Principal Plans A Special Assembly (Meeting) To Honor Outstanding Students), and the lowest mean rating (1.54) was for item 3 (My Principal Talks With Me About What I Want To Learn In School). It is interesting to note that these two items for the effectiveness rating (3,4) for secondary students were the same as those for the elementary students (Table 4) in terms of highest and lowest mean ratings. Apparently secondary students perceived their principals as effectively honoring student achievements and ineffectively discussing learning interests. Considering all 12 items for the effectiveness of performance rating scale, only five (2,4,6,8,10) yielded mean item ratings either approaching or above the scale midpoint equal to 2.5, indicating these secondary students' perceptions of their principal's functioning on these tasks as relatively ineffective.

In comparing the frequency and effectiveness of performance ratings for the 12 PPDS items for secondary students (Table 5), there was a tendency for the effectiveness ratings to be only slightly higher than the frequency ratings

TABLE 5

Summary of Composite School Means and Standard Deviations for Combined Eighth and Eleventh Grade Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators
(n=1003 students in 4 secondary schools)*

	Frequency of Occurrence		Effectiveness of Performance	
PPDS - Student Form Items	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1. My principal asks me what I think about new things we are going to do in school.	1.37	0.77	1.59	0.97
2. My principal tells me to try to do things in my class that help me learn.	1.34	0.75	2.29	1.24
3. My principal talks with me about what I want to learn in school.	2.69	1.25	1.54	0.92
4. My principal plans a special assembly (meeting) to honor outstanding students.	2.24	1.21	2.91	0.92
5. My principal tells students about their responsibilities and privileges (rights) at school assemblies.	2.63	1.22	2.10	1.21
6. My principal asks me what I think about the special student activities.	1.78	1.06	2.37	1.29
7. My principal tells students in my school about the special achievements of good students.	1.73	1.02	1.78	1.01

TABLE 5 (continued)

PPDS - Student Form Items	Frequency of Occurrence		Effectiveness of Performance	
	$\overline{X}$	S.D.	$\overline{X}$	S.D.
8. My principal tells students who misbehave about school rules.	1.78	1.03	2.46	1.25
9. My principal tells students who misbehave about how they bother other students.	2.60	1.23	1.95	1.09
10. My principal tells students when they are being good and doing things right.	2.26	1.17	2.64	1.25
11. My principal makes it easy for students to tell him/her about how they feel about things.	2.48	1.22	2.20	1.19
12. My principal gives special awards to students or classes with good attendance.	1.83	1.07	2.31	1.23

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*Each item was scored on a 4 point scale with an assumed neutral point mean rating equal to 2.5

(grand mean for frequency = 2.06; for effectiveness = 2.17) though not significantly so. In viewing individual items in terms of frequency and effectiveness score comparisons, several items (2,3,5,6,8,9,12) demonstrated significant discrepancies in favor of one of the two rating scales.

In summary, administration of the PPDS-Student Form (II) instrument to these samples of elementary and secondary students resulted in somewhat lower overall frequency and effectiveness of performance ratings of principals' behavior at the secondary school level. This difference might in part be explained by the necessity of significantly greater student/principal interaction (visibility) at the elementary school level. This interpretation should be considered tenuous at best, since the average item scores can change considerably with the addition of new schools to the sample during the 1976 - 1977 project year.

Results of PPDS-Principal Form (II) Administration

The PPDS-Principal Form (II) instrument consisted of all 273 items selected for the development of a second set of PPDS forms for which both frequency and effectiveness of performance ratings were obtained. Like teachers responding to the PPDS - Teacher form, principals were instructed to omit effectiveness ratings for any item having a frequency rating of 1 (Never). A complete copy of the PPDS-Principal Form instrument can be found in Appendix I. The PPDS-Principal Form (II) instrument was administered on a "take-home" basis to each principal in the sample of 10 schools with approximately one week allowed for completion.

A summary of composite means and standard deviations for sub-scales of the Principal PPDS Form (II) instrument for frequency and effectiveness ratings is presented in Tables 6 and 7 respectively. Sub-scale scores on the instrument were derived by summing scores for the total number of items comprising a given Functional Area of Administrative Responsibility or Administrative Operation.

TABLE 6

Summary of Composite Means and Standard Deviations for Frequency Ratings of Sub-scores from the Principal Performance Description Survey - Principal Form for 10 Principals

	FREQUENCY SCORES*			
PPDS - Principal Form Sub-scales Functional Areas of Responsibility	$\bar{X}$	S.D.	$\bar{X}$ as % of Maximum Possible Score	Average Item Rating
1. Curriculum and Instruction (69)[1]	199.90	31.82	58	2.89
2. Staff Personnel (57)	174.30	23.89	61	3.06
3. Pupil Personnel (83)	237.40	44.05	57	2.86
4. Support Management (8)	22.50	6.84	56	2.81
5. School-Community Interface (9)	27.70	5.81	62	3.08
6. Fiscal Management (25)	81.90	16.81	66	3.28
7. System-wide Policies and Operations (22)	64.40	13.83	59	2.93
Administrative Operations				
1. Data Collecting (51)	142.50	26.27	56	2.79
2. Planning (56)	161.20	29.38	58	2.88
3. Communicating (34)	111.80	15.84	66	3.29
4. Decision-Making (31)	98.20	16.46	63	3.17
5. Implementing (56)	165.20	28.43	59	2.95
6. Evaluating (45)	129.20	27.20	57	2.87

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*Item rating used: 1=Never..., 5=Very Often

[1] Number of items on sub-scale

TABLE 7

Summary of Composite Means and Standard Deviations for Effectiveness Ratings of Sub-scores from the Principal Performance Description Survey - Principal Form for 10 Principals

	EFFECTIVENESS SCORES*			
PPDS - Principal Form Sub-scales Functional Areas of Responsibility	$\bar{X}$	S.D.	$\bar{X}$ as % of Maximum Possible Score	Average Item Rating
1. Curriculum and Instruction (69)[1]	194.70	40.76	56	2.82
2. Staff Personnel (57)	171.90	30.12	60	3.02
3. Pupil Personnel (83)	227.50	51.39	55	2.74
4. Support Management (8)	21.90	7.25	55	2.74
5. School-Community Interface (9)	27.70	6.77	62	3.08
6. Fiscal Management (25)	81.50	15.76	65	3.26
7. System-wide Policies and Operations (22)	62.60	14.61	57	2.85
Administrative Operations				
1. Data Collecting (51)	139.20	34.41	55	2.73
2. Planning (56)	156.90	34.62	56	2.80
3. Communicating (34)	109.80	17.99	65	3.23
4. Decision-Making (31)	96.70	16.36	62	3.12
5. Implementing (56)	158.80	30.31	57	2.84
6. Evaluating (45)	126.70	31.51	56	2.82

*Item ratings used: 1=Ineffective..., 5=Very Effective

[1] Number of items on sub-scale

The number of items on each sub-scale follows the sub-scale name in parentheses. As with the Teacher PPDS instrument, a percentage maximum possible score was computed for each sub-scale in order to make absolute standard, and between sub-scale comparisons.

The data in Tables 6 and 7 (frequency and effectiveness scores respectively) demonstrate no outstanding sub-scale differences or trends. Average item ratings tended to be centered on the 5-point rating scales used, possibly representing a "halo" effect in principals' judgments about the frequency and effectiveness with which they see themselves as performing a wide variety of functions in the school. It might also be noted that average item scores and percentage maximum possible scores were higher for principals than for either teachers or the external observer (Table 8), indicating principals' more positive judgments concerning their own performances relative to other sources. This finding is similar to that demonstrated for the first (1974-1975) field test of the GPAS in 45 schools. Apparently, principals' self-ratings yield scores discrepant from those provided by other sources, in the direction of more positive assessments in all areas of Administrative Operations and Functional Areas of Responsibility.

Results of PPDS - External Observer Form (II) Administration

It will be recalled that the PPDS - External Observer (EO) Form (II) instrument consisted of 141 principal performance indicator statements selected as appropriate for administration in an interview situation with a given principal. Unlike the PPDS teacher, student, and principal form instruments, the PPDS - EO instrument yielded only one rating for each competency indicator in the form of a product score ranging from 1--Informal to 4--Product. A complete copy of the PPDS - EO Form (II) instrument can be found in Appendix I.

Within the sample of 10 schools, each participating principal was administered the EO instrument by a Project R.O.M.E. assessment staff member during the regular school day. Administration time generally approximated one hour.

A summary of means and standard deviations for product scores derived from 10 principals in the sample schools by Functional Areas of Administrative Responsibility and Administrative Operation is presented in Table 8. Mean total scores were computed by averaging the sum of item scores within given Functional Areas or Administrative Operations across principals in the sample. In addition, a percentage maximum possible score was computed to facilitate both absolute and between sub-scale comparisons. Average item ratings were computed by dividing the mean total score for a given sub-scale by the total number of items comprising the scale.

Viewing Table 8, it can be seen that the lowest rated Functional Areas of Administrative Responsibility sub-scale item classification was System Wide Policies and Operations, with a percentage maximum score of 27 and an average item rating of 1.06. The highest rated classification was for the School-Community Interface sub-scale with a percentage maximum possible score of 53 and an average item rating of 2.11. As regards the Administrative Operations sub-scales, Evaluating and Implementing were the lowest rated (26% and 36% of the maximum possible score respectively) while Communicating activities yielded the highest percentage of maximum possible score (50%) and average item rating (2.00).

Apparently in this sample of schools (n=10), the presence of concrete, directly observable kinds of evidence to corroborate principals' past or present performances of the EO indicator statements was somewhat lacking. For these ten schools, both percentage maximum possible scores and average item ratings for the various EO sub-scales were considerably lower than those for the principals participating in the 1974 - 1975 field test of the GPAS. Again,

TABLE 8

Summary of Composite Means and Standard Deviations for Product Scores Derived from External Observation Inventory for 10 Principals[1]

External Observation Inventory Sub-scales Functional Areas of Responsibility	PRODUCT SCORES $\overline{X}$ Total Score	S.D.	$\overline{X}$ as % of Maximum Possible Score	Average Item Rating
1. Curriculum and Instruction (28)[2]	36.1	13.05	32	1.29
2. Staff Personnel (16)	24.0	3.86	38	1.50
3. Pupil Personnel (53)	73.0	23.16	34	1.38
4. Support Management (5)	5.9	3.70	29.5	1.18
5. School-Community Interface (8)	16.9	6.62	53	2.11
6. Fiscal Management (17)	29.0	8.15	43	1.71
7. System-wide Policies and Operations (14)	14.9	5.40	27	1.06
Administrative Operations				
1. Data Collecting (27)	40.0	11.21	37	1.48
2. Planning (24)	40.5	11.61	42	1.69
3. Communicating (10)	20.0	6.7	50	2.00
4. Decision-Making (25)	41.3	6.27	41	1.65
5. Implementing (16)	23.0	10.86	36	1.44
6. Evaluating (39)	35.0	11.88	26	.90

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[1] A four category scale was used: 1=Informal Evidence, 2=Input Evidence Available, 3=Evidence (Product) in Process, 4=Product Available Evidence

[2] Number of items on sub-scale

the two forms of the PPDS - EO instrument (1974 - 1975 and 1975 - 1976) are not directly comparable in that their items represent somewhat different content. Thus, comparisons of the two sets of scores should be considered only tenuous. As with the PPDS - Teacher Form comparisons, it may well be that generally lower sub-scale scores will be evident for the PPDS - EO Form (II) instrument since indicators comprising the instrument were judged lower in priority by principals participating in the 1974 - 1975 statewide survey. If this is the case, then it can be predicted that average item ratings for sub-scales comprising the EO Form (II) instrument will remain generally lower than those for the first form of the EO instrument (1974 - 1975) as the field-test sample increases in size during the 1976 - 1977 project year.

MEDIATING VARIABLES: THE MY SCHOOL INVENTORY, LEARNING ENVIRONMENT INVENTORY AND SCHOOL SURVEY

Two general levels of criterion variables within the Georgia Principal Assessment System (GPAS) have been described as Mediating and Outcome variables. Mediating variables are conceived as teacher and student perceptions of the school working and learning climate or environment that eventuate in subsequent behaviors, and that are impacted (influenced by) particular principal performances. Outcome variables (student achievement and average daily attendance) are considered more strongly related to Mediating variables than Input variables (principal performance assessments). Thus, the general GPAS validation design assumes that principals' behaviors impact on school outcomes through their influence on the mediating variables of teacher and student perceptions of characteristics of the school work and learning climate/environment. Results of the first field test of the GPAS (1974 - 1975) in 45 schools generally supported these assumptions as well as demonstrated the strong global relationships existing between mediating and outcome criterion measures.

Mediating variables within the GPAS consist of measures of students' perceptions of multiple dimensions of the school climate/learning environment and teachers' assessments of multiple characteristics of their work setting (job-related satisfactions). Elementary students are administered the 45 item, five scale _My School_ Inventory. Secondary students are administered the 105 item, 15 scale _Learning Environment Inventory_ (LEI). Teachers are administered the 118 item, 14 factor _School Survey_ instrument. A complete description of the selection of these Mediating measures and their psychometric properties is provided in the Project R.O.M.E. Assessment report for the 1974 - 1975 field test of the GPAS and will not be discussed here. The interested reader is referred to these documents for further detail.

The following section of this report summarizes descriptive statistics for the sample of 10 schools participating in GPAS field testing during the Spring of 1976. Comparisons of summary data to "normative data" derived from the first field test of the GPAS during the 1974 - 1975 project year in 45 schools are made where they facilitate data interpretation.

Elementary Student Perceptions of School Climate Characteristics: _The My School Inventory_

A summary of the data derived from administration of the _My School_ Inventory to 1,200 students in 6 elementary schools is presented in Table 9. The 45 items comprising the _My School_ instrument are grouped into five general sub-scales or dimensions: Satisfaction, Friction, Competitiveness, Difficulty, and Cohesiveness. Because of the scoring procedure applied to the instrument, high means should be interpreted in a direction opposite that implied by the sub-scale label, e.g., _higher Cohesiveness_ score represents students' perception of relatively _less cohesiveness_ in the school. The obtained ranges on the five dimensions of the instrument vary from one (due to omitted responses)

TABLE 9

Summary of Composite School Means and Standard Deviations for the Five Dimensions of the My School Inventory Administered to Elementary Students (n=1,200) in Six Schools*

My School Inventory Dimensions	$\overline{X}$	S.D.	Norm Mean[1]	$\overline{X}$ as % of Maximum Possible Score
1. Satisfaction	13.96	2.53	14.24	78
2. Friction	10.67	1.59	10.43	59
3. Competitiveness	11.06	1.44	10.90	61
4. Difficulty	14.11	1.86	14.43	78
5. Cohesiveness	13.21	1.57	13.12	73

*Each dimension contains nine items. Items were scored 1=yes and 2=no. High means should be interpreted negatively, i.e., in a direction opposite that of the dimension label.

[1] Normative data derived from Project R.O.M.E. 1974-1975 assessment sample of 3,350 elementary students.

to 18 (9 items times a maximum rating of 2 per item). The true interpretable ranges, however, vary from nine to eighteen. Means for the six schools in this sample are compared to means for the sample of 3,350 elementary students in 35 schools in the State of Georgia from the 1974 - 1975 field test of the GPAS (norm mean). Since the individual items were scored either 1 for "yes" or 2 for "no", the assumed neutral point mean score is equal to 13.5. Means above this neutral point represent relatively less of the scale name, while scores significantly below 13.5 represent significantly more of the scale name. With these scoring difficulties, a mean score for any scale approximating 13.5 would represent a mean as a percent of maximum possible score equal to 75%.

In comparing means on the My School scales for the sample of six schools and the larger sample of 35 schools (norm), no outstanding trends appear in the data. Within the sample of six schools, elementary students perceived their school environments as somewhat competitive academically and containing some friction as concerns interpersonal relationships with others. All other sub-scale scores approximated a relatively neutral perception score not significantly different from the average of that expressed by the larger R.O.M.E. sample of 35 elementary schools. Considering the standard deviation in mean scores for these six schools, the sub-scale means are not generally different from the existing average of elementary student perceptions derived from the R.O.M.E. 1974 - 1975 field test of the GPAS. In establishing a second sample for validation of a new set (273) of principal competency indicators during the 1976 - 1977 project year, this is considered a supportive finding.

Secondary Student Perceptions of Characteristics of the Learning Environment: The Learning Environment Inventory

A summary of the data derived from the administration of the 105-item Learning Environment Inventory (LEI) to 1,003 students (grades 8 and 11) in 4 secondary schools is presented in Table 10. The 105 items are grouped in terms

TABLE 10

Summary of Composite School Means and Standard Deviations for the Fifteen Dimensions of the Learning Environment Inventory Administered to Combined 8th and 11th Grade Students in 4 Secondary Schools (n=1003)

Learning Environment Inventory Dimensions[1]	$\bar{X}$	S.D.	Norm Mean[1]	$\bar{X}$ as % of Maximum Possible Score
1. Cohesiveness	18.82	2.92	18.27	67
2. Diversity	19.96	2.81	20.13	71
3. Formality	19.20	2.81	18.46	69
4. Speed	18.98	3.23	18.86	68
5. Environment	16.40	3.34	15.56	59
6. Friction	20.15	3.21	20.13	72
7. Goal Direction	17.04	2.92	16.22	61
8. Favoritism	19.20	3.64	18.30	69
9. Difficulty	20.82	3.14	17.94	74
10. Apathy	15.82	2.91	18.47	57
11. Democratic	18.25	3.14	14.95	65
12. Cliqueness	18.51	2.62	21.03	66
13. Satisfaction	18.56	3.14	15.05	66
14. Disorganization	15.37	3.06	18.15	55
15 Competitiveness	18.83	3.05	18.27	67

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[1] Each dimension is composed of seven items. Items were scored 1=Strongly Disagree to 4=Strongly Agree.

[2] Normative data derived from Project R.O.M.E. 1974-1975 assessment sample of 3,613 secondary students.

of item content into the fifteen dimensions listed in the table, with seven items comprising each dimension. The possible score ranges for any LEI dimension range from 0 to 28 (assuming missing data), but the true interpretable score ranges (assuming no missing data) range from 7 to 28. A mean score of 17.5 for any dimension represents a "neutral" opinion or midpoint, and would be expressed as a percentage maximum possible score equal to 62.5%. The norm sample means are derived from the 1974 - 1975 administration of the LEI to 3,613 secondary students in 10 schools in the State of Georgia. Unlike scores for the My School instrument described above, higher scores on any LEI dimension can be interpreted in the same direction as that implied by the dimension label, e.g., higher Cohesiveness scores indicate secondary students' perception of relatively greater Cohesiveness, etc.

Inspection of the data in Table 10 indicates some observable differences between the sample of 4 secondary schools and R.O.M.E. norm scores. Apparently students in this sample perceived their school environments as containing relatively greater academic difficulty (Difficulty scale), less apathy (Apathy scale), more democratic rule (Democratic scale), less social cliqueness among peers (Cliqueness scale), greater satisfacttion with school and its offerings (Satisfaction scale), and more school organization (Disorganization scale)... than students in the R.O.M.E. norming group. All other mean comparisons between these four sample schools and the norming group do not essentially differ as regards mean scores.

Viewing the percentage of maximum possible scores for the various subscales of the LEI for students in this sample of four schools, the perceptions of relatively greater diversity, more friction among peers, academic difficulty, less apathy and more school organization tended to go together when compared to the other LEI sub-scales. The findings for the Diversity and Friction scales were similar to the responses of secondary students participating in the

1974 - 1975 GPAS field test. Considering all of the possible sub-scale comparisons on the LEI, this sample of four secondary schools seems highly similar to the average secondary student response in the existing R.O.M.E. data base. Differences appearing in Table 10 might well disappear with the addition of secondary schools to this sample during the 1976 - 1977 project year, indicating greater similarity between the two field test samples.

Teacher Perceptions of Characteristics of Their Working Environment: The School Survey

A summary of data derived from administration of the School Survey instrument to 255 teachers in the 10 sample schools (both elementary and secondary) is presented in Table 11. The 118 items on the School Survey are grouped on the basis of content into the 14 dimensions (sub-scales) listed in the table. The number of items comprising each sub-scale is found in parentheses after each sub-scale name. Items on each dimension were scored from 1--Disagree to 3--Agree, generating a "neutral" or midpoint of no opinion for a scale equal to the number of items on a scale multiplied by 2. The assumed neutral point standards are provided for each School Survey dimension. Scores above the midpoint for any sub-scale indicate relatively more positive attitudes toward the sub-scale, those significantly below the midpoint represent somewhat negative attitudes towards the sub-scale. Normative data are derived from the 1974 - 1975 R.O.M.E. GPAS field test with 1,200 teachers in 45 schools in the State of Georgia.

Inspection of the data summarized in Table 11 indicates that teachers in this sample tended to have more positive attitudes towards Administrative Practices, school programs for Evaluation of Students, School-Community Relations, Supervisory Relations, and Voice in Educational Programs than the "average" teacher in the 1974 - 1975 R.O.M.E. sample. All other School Survey sub-scale differences were essentially minimal between the two samples. In

TABLE 11

Summary of Means and Standard Deviations for Dimensions of the School Survey Administered to 255 Teachers in 10 Schools[1]

School Survey Dimensions	Assumed Mean or Neutral Point	Mean	S.D.	$\bar{X}$ as % of Maximum Possible Score	Average Item Rating	Norm Mean[3]
1. Administrative Practices (9)[2]	18.0	18.95	4.62	70	2.11	15.58
2. Professional Work Load (9)	18.0	21.42	3.42	79	2.38	19.60
3. Non-Professional Work Load (6)	12.0	14.02	3.73	78	2.34	12.81
4. Materials and Equipment (8)	16.0	16.28	4.69	68	2.04	15.89
5. Buildings and Facilities (7)	14.0	16.06	3.87	76	2.29	14.43
6. Educational Effectiveness (10)	20.00	21.40	4.47	71	2.14	20.28
7. Evaluation of Students (10)	20.0	21.36	4.33	71	2.14	18.60
8. Special Services (8)	16.0	15.95	3.79	68	1.99	15.42
9. School Community Relations (7)	14.0	16.26	2.75	77	2.32	13.09
10. Supervisory Relations (10)	20.0	24.77	5.08	83	2.48	21.36
11. Colleague Relations (7)	14.0	16.51	3.65	79	2.36	15.21
12. Voice in Educational Programs (8)	16.0	16.84	3.51	79	2.11	13.23
13. Performance and Development (10)	20.0	22.26	5.13	75	2.23	20.22
14. Financial Incentives (9)	18.0	13.84	3.96	51	1.54	14.63

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[1] Items on each dimension of the School Survey were scored 1=Disagree to 3=Agree

[2] Number of items on scale

[3] Normative data derived from Project R.O.M.E. 1974-1975 sample of 1200 teachers in 45 schools

comparing mean scores of these teachers to neutral values on the separate subscales, generally positive attitudes were expressed towards all dimensions of the School Survey with the exception of the Financial Incentives factor. The teachers in this sample seem generally more favorable towards general characteristics of their working (school) setting than teachers in the larger R.O.M.E. sample.

Summary Data For School Outcome Variables: Student Achievement and School Average Daily Attendance

Outcome variables within the R.O.M.E. GPAS validation design consist of student standardized test performance and school average daily attendance. Elementary student achievement data (grades 4 and 8) are derived from subtest scores of the Iowa Tests of Basic Skills (ITBS) available through the Georgia Statewide Testing Program. Secondary student achievement data (grade 11) are derived from the Math and Reading subtests of the Tests of Academic Progress (TAP). Average daily attendance (ADA) data are generated by school for the twenty day period most closely approximating the time of field testing (data collection), and are expressed as a percentage of maximum daily attendance.

A comparison between student outcome criterion data for the 1974 - 1975 and 1975 - 1976 project R.O.M.E. field test samples is presented in Table 12. The student achievement data are presented by grade (4,8, and 11) and represent average standard scores for all schools in the two samples. Grade equivalent scores are provided for the ITBS Battery Total score for grades 4 and 8. While no grade equivalent conversions were made for eleventh-grade students, (TAP) average standard score ranges are provided.

Inspection of the data in Table 12 indicates that this sample (1975 - 1976) of fourth and eighth grade schools were somewhat below the average score of the 1974 - 1975 R.O.M.E. school sample as regards standardized achievement test performance. The differences between the samples were larger for grade 8

TABLE 12

Comparison of Student Outcome Criterion Data Between R.O.M.E. 1974 - 1975 and 1975 - 1976 Field-Test Sample Schools

	1974 -75 $\overline{X}$'s[1]		1975 - 76 $\overline{X}$'s	
VARIABLE	GRADES		GRADES	
Iowa Tests of Basic Skills	4 (n=35)	8 (n=8)	4 (n=3)	8 (n=2)
1. Vocabulary	67.3	100.3	64.6	93.7
2. Reading	66.1	100.1	64.6	93.8
3. Language	67.1	97.5	65.6	89.9
4. Work Study Skills	67.0	100.5	66.8	93.2
5. Mathematics	66.9	99.9	65.0	95.1
6. ITBS Battery Total	66.6	100.2	64.8	93.2
	(4.1)[2]	(7.8)	(3.95)	(7.02)
Average Daily Attendance (School)[3]	95.09		95.08	
Tests of Academic Progress	GRADE 11 (n=7)		GRADE 11 (n=2)	
1. Reading	43.1	(48 - 52)[4]	44.5	(48 - 52)
2. Math	51.8	(47 - 52)	44.4	(47 - 52)
Average Daily Attendance (School)	92.89		87.1	

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[1] $\overline{X}$'s are average standard scores for all schools in the sample.

[2] Grade Equivalent Scores for ITBS Battery Total Score.

[3] Expressed as an average percentage of maximum daily attendance for 20 day period closest to time of field testing.

[4] Average Standard Score range.

than for grade four. Grade 11 samples (Tests of Academic Progress) differed in that Reading mean standard scores for these two schools were above the mean for the larger R.O.M.E. sample. However, for the Math subtest, the trend was reversed. No large discrepancies in mean average daily attendance were evident for grades eight and four. However, a considerable difference was noted for grade eleven students. The lower ADA figures for the 1975 - 1976 school sample can be attributed to extremely low reported attendance in one of the sample schools during the twenty-day period most closely approximating the time of data collection (78.7 %).

Field Test Conclusions

The process of selecting a second set of principal competency indicator statements and field testing these within an initial sample of 10 schools (6 elementary and 4 secondary) has provided a partial data base to be expanded during the 1976 - 1977 project year for principal competency indicator validation research. Examination of the descriptive data for this school sample (n=10) for Input, Mediating, and Outcome measures by comparing it to the existing R.O.M.E. data base derived from 45 schools, supports the general similarity of these 10 schools to the first (1974 - 1975) field test sample. Extreme differences were not noticed considering the large number of variables on which the two samples were compared. A general conclusion in support of the comparability of the two samples seems warranted, particularly for Mediating and Outcome variables within the GPAS design.

Chapter III

APPLICATION OF THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM (GPAS) TO A FIELD-BASED INSTRUCTIONAL PROGRAM FOR PUBLIC SCHOOL PRINCIPALS

One of the major objectives of the Project R.O.M.E. assessment component during the 1975 - 1976 project year was to conduct a pre- and post-assessment of principals (and their schools) selected to participate in a field-based training program designed and implemented by R.O.M.E. personnel in the Department of Educational Administration at Valdosta State College (VSC), Valdosta, Georgia. The application of the GPAS to these participants was intended to serve several general project purposes, each of which is explicated in the context of the discussion that follows in this chapter.

Components of the Instructional Program

In keeping with competency-based education models emphasizing the importance of field-based rather than traditional instruction of school personnel, VSC R.O.M.E. staff developed a five phase instructional system to be piloted during the Spring of 1976 with selected school principals and assistant principals seeking credit toward 6th year certification in the State of Georgia. This instructional system, entitled FOCUS (Field-Oriented Competency Utilization System), was developed to include as content high-priority competencies and performance indicators surviving the 1974 - 1975 R.O.M.E. verification survey with 290 school principals described in Chapter I of this report.* Working within the framework of a school problem-solving model termed Consequence Analysis, VSC R.O.M.E. staff selected four FACT statements and relevant performance indicators as core objectives operationalizing each step in the consequence analysis training model. In this way a "natural" blending of verified principal competencies and performance indicators and the problem-solving process was achieved.

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*A detailed description of the components and processes in the FOCUS program can be obtained from Dr. Joseph Licata, Department of Educational Administration, Valdosta State College, Valdosta, Georgia. The FOCUS description provided here does not include a discussion of many other required and support activities included in the total training model.

The FOCUS program was "competency-based" in that administrative competency was defined at a high level of abstraction (the ability to solve school-related problems) on the one hand, and at a low level of abstraction (operationalizing steps in the consequence analysis model through selected principal performance indicators and FACT statements developed by R.O.M.E. assessment personnel) on the other. The specific FACT statements from which the FOCUS training program core instructional objectives were derived are listed below along with performance indicators restated within the FOCUS model as performance outcome criteria. In addition, major steps in the consequence analysis model operationalized by these FACT statements and relevant indicators are provided to demonstrate the "natural" blending mentioned.

I. INITIATING STRUCTURE

FACT: Modification of Curriculum Content and Organization

Indicators:
1. Schedules released time for teachers to plan for and revise courses during regular school day.
2. Schedules staff meetings to discuss curriculum content areas where modification is needed.
3. Appoints faculty committee to review curriculum content and organization and recommend needed changes.

II. DEFINING THE PROBLEM

FACT: Modification of Curriculum Content and Organization

Indicators:
1. Assesses extent to which curriculum content is perceived as being relevant by students, teachers, and business and community members.
2. Determines curriculum areas needing modification.

III. CHARTING ALTERNATIVES

FACT: Teacher Input and the Design of Curriculum

Indicators:
1. Determines desirable curriculum changes based on classroom observation information, teacher discussion, etc.
2. Encourages teachers to generate new curriculum ideas.

IV. IMPLEMENTING OBJECTIVES

FACT: Evaluation of Student Progress Toward Instructional Objectives

Indicators:
1. Discusses with teachers which procedures for evaluating both short and long range instructional objectives are to be employed.
2. Maintains a system for continuous recording of achievement test data, grades, and other evaluative information.
3. Plans a system for evaluating student progress toward instructional objectives.
4. Periodically evaluates student achievement using standardized tests.
5. Decides what methods are to be used in evaluating progress toward instructional objectives.

V. INTERVENTION

FACT: Teacher Instructional Problem-Solving Skills

Indicators:
1. Plans in-service training to help teachers develop skills necessary for solving instructional problems.
2. Observes teachers in classrooms in order to identify instructional problem-solving skills needing improvement.
3. Periodically discusses classroom goals with teachers.

It might be noted that the Functional Area of Administrative Responsibility reflected in the FACT statements and subsumed performance indicators was Curriculum and Instruction, a general area selected for training owing to the R.O.M.E. 1974 - 1975 competency validation research results in 45 schools in the State of Georgia. The general classification of curriculum and instruction competencies and performance indicators had been previously demonstrated to show statistically significant and frequently occurring correlations to both Mediating and Outcome variables within the GPAS validation design (see Chapter I in this report for a results summary). Resulting from the integration of steps in the consequence analysis model with FACT statements and performance indicators was an instructional program in curriculum and instruction problem-solving operationalized through the demonstration of curriculum and instruction performances in the school context. An important dimension of the FOCUS program structure was that _all_ performance indicators selected for the program training objectives had been previously judged by practicing school principals (n=290) as essential for the effective operation of a school.

Pre and Post Assessment Procedures

Since elements in the FOCUS training program centered around high-priority competencies and performance indicators developed by R.O.M.E. assessment staff at the University of Georgia, and because a major objective for the R.O.M.E. assessment component during the 1975 - 1976 project year was to demonstrate the "sensitivity" of the _G_eorgia _P_rincipal _A_ssessment _S_ystem (GPAS) to measure principal competency change due to training, a pre and post assessment of FOCUS participants was conducted using all instrumentation in the GPAS. In addition, data derived from the pre assessment provided "baseline" information about principals' competencies and school-related problems for individualization of FOCUS training objectives. Contrasting pre and post assessment data allowed for an "external evaluation" of the FOCUS program in terms of its impact on the solution of school-related problems and hopefully increasing principals' competencies.

Valdosta State College R.O.M.E. staff identified 23 school administrators (16 principals, 6 assistant principals, and 1 superintendent) from 17 schools, representing four school districts in Southwest Georgia, to participate in the FOCUS training program initiated in January, 1976. Once these participants were identified, data were collected for all instruments in the GPAS from principals and assistant principals (PPDS - Principal Form I), an external observer (PPDS - E.O. Form I), all teachers in each school (PPDS - Teacher Form I and the School Survey), and all fourth-, eighth-, and eleventh-grade students in particular schools (PPDS - Student Form I and either the Learning Environment Inventory or the My School inventory) in November, 1975. General mechanics of data collection were the same as those described in chapter two of this report and will not be detailed here.

Once these data were scored and summarized for the various GPAS instruments, they were reported to VSC R.O.M.E. staff on a total group, school system, and individual basis to be used in deriving instructional "content" for the problem-solving process and field-based training of FOCUS participants. Two general classes of information useful to the FOCUS program were reported to VSC staff: problem identification data, and competency assessment data.

Problem Identification Data: GPAS Mediating Variables

In defining school-related "problems" for each FOCUS participant to which the problem-solving process would be applied, VSC R.O.M.E. personnel utilized data summaries for dimensions of the various GPAS Mediating variable measures. Teacher-related problems were identified by scores on the fourteen dimensions of the School Survey instrument used to assess teachers' attitudes towards dimensions of their working environment. Student-related problems were identified by the fifteen dimensions of the Learning Environment Inventory (secondary schools) and the five dimensions of the My School inventory (elementary schools) used to assess students' perceptions of characteristics of the school climate/learning environment. Data summaries for these instruments for individual schools were compared to both system and R.O.M.E. 1974 - 1975 "norm" scores to identify problem areas within the school context. In addition, FOCUS supervisors gave some consideration to the correlational relationships between these Mediating variable measures and school Outcome variables (student achievement and school average daily attendance) resulting from the 1974 - 1975 field-test of the GPAS in 45 schools. This process resulted in the identification of school problems using dimensions of the School Survey, Learning Environment Inventory, and My School instruments having known relationships with meaningful school outcome variables. The lowest obtained scores for various factors measured by these instruments were suggestive of problem areas in the school needing solution. Working with each FOCUS participant, VSC R.O.M.E. personnel used these pre-assessment data to articulate a high-priority school problem upon which to base an individualized instructional program objective for each administrator.

Competency Assessment Data: GPAS Input Variables

In assessing competencies of individual participants, R.O.M.E. assessment personnel administered the various Principal Performance Description Survey (PPDS)-Form I instruments developed and field-tested during the 1974 - 1975 project year. Both frequency and effectiveness of performance scores were derived for a large number (n=338) of high-priority performance indicators of principal competencies from teachers, students, and individual principals and assistant principals in the 17 FOCUS schools. In addition, the PPDS-External Observer Form-I was administered to each principal participating in the FOCUS training program.

Individual data summaries were provided to VSC R.O.M.E. personnel for each of the various PPDS instruments for competencies and performance indicators classified by both Functional Areas of Administrative Responsibility (Curriculum and Instruction, Staff Personnel, Pupil Personnel, School Community Interface, Fiscal Management, Support Management, and System-wide Policies and Operations) and Administrative Operations (Data Collection, Planning, Communicating, Decision Making, Implementing, and Evaluating) sub-scales. Scores were derived for individuals, systems, and the total group of participants for each PPDS instrument sub-scale. In addition, "normative" data were provided from the 1974 - 1975 GPAS field test in 45 schools in the State of Georgia to be used as a score comparison standard.

Scores for the various PPDS instrument sub-scales allowed for the identification of discrepancies between principals' self-assessments in a variety of competency areas, and assessments by other sources. This "discrepancy analysis" procedure allowed VSC R.O.M.E. personnel to consult with individual FOCUS participants in planning a program of study requiring the utilization of both required and supplemental program materials. For example, an individual participant having large discrepancies between "self" and "others" in the assessment of Staff Personnel competencies was directed to complete individual learning modules and other resource materials in this area as part of accomplishing the FOCUS training program objective of increasing administrative competence. When discrepancy analysis information was combined with core objectives operationalizing steps in the Consequence Analysis problem-solving model, the FOCUS training program was problem-centered, competency-based, and highly individualized for each participant.

Post-assessment data were collected for all instruments in the GPAS in each participant's school during early May, 1976, at the termination of the FOCUS training program. These data were contrasted to the Fall, 1975 pre-assessment data to assess the impact of the training program on 1) the solution of school-related problems identified through pre-assessment, and 2) the attainment of competencies in a wide variety of professional areas of administrative responsiblity. The assessment and data analysis design served as a general "external evaluation" of the FOCUS training program in terms of its effectiveness in bringing about change in principals and their schools.*

Pre and Post Assessment Results

The following sections of this chapter present major findings from analyses of pre and post assessment data collected on principals participating in the VSC FOCUS training program. The results reported here serve as an "external evaluation" of the program in terms of its impact on principals' specific and general performances (competencies) and teacher and student assessments of characteristics of the school working and learning environment. The general evaluation paradigm assumed that changes in principals' performance levels as a result of the FOCUS experience would "impact" on teacher morale and student attitudes towards dimensions of the school climate/learning environment. Because of the manner in which the Consequence Analysis instructional model was developed to include verified competency indicator statements and the multiple ways in which the various PPDS forms can be scored, several different score comparisons relative to principals' "competencies" are made. Thus, a variety of pre and post score comparisons will be made as each lends interpretation to the impact of the FOCUS training program.

It should be recalled that the original FOCUS participants were 16 principals, 6 assistant principals, and 1 superintendent. Owing to personal difficulties and other factors, several of these participants either dropped out or did not complete the full five month program. Therefore, pre and post comparisons will only be made for those participants completing the entire program. In addition, since the Georgia Principal Assessment System (GPAS) has been developed for building level principals only, data collected on and in the schools of assistant principals will not be described in great detail. No GPAS data were collected on the one participating superintendent.

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*An "internal evaluation" of the FOCUS program by participants was also conducted by VSC R.O.M.E. staff during the course of training. A report of the internal evaluation results is available from Dr. Joseph Licata, Department of Educational Administration, Valdosta State College, Valdosta, Georgia.

In reading the following results, the reader should bear in mind several limitations of the evaluation design. Among these is the difficulty in interpreting significant score changes where these are observed. Since fully six months elapsed between pre and post assessment with the GPAS, many factors other than the training program itself could have possibly influenced the data. The effects of these "confounding" variables can not be separated out without sufficient controls. Owing to both budget and time constraints, a comparative group of administrators serving as a control from which pre and post assessment data could be derived was not included in the external evaluation design. However, for certain instrumentation within the GPAS, "normative" data is available from the 1974 - 1975 field test in 45 schools in the State of Georgia, and this will be used as a "benchmark" where it lends interpretation to the overall results. In addition, comparisons internal to the FOCUS participants can be made for certain GPAS instruments by contrasting data for those principals who completed the program to those who did not. These comparisons are possible because all principals allowed R.O.M.E. assessment staff to post assess their schools with the GPAS even though they may have dropped out of the FOCUS program.

Even though there were limitations in the external evaluation design, the reader should also remember that the application of the GPAS as a set of assessment procedures for measuring the impact of the FOCUS training model is in a "pilot" phase. As the R.O.M.E. project continues during the 1976 - 1977 project year, revision and refinement of both instrumentation within the GPAS and elements of the FOCUS program, combined with more adequate control groups, should yield more definitive data bearing on the effects of the field-based training approach.

COMPETENCY ASSESSMENT ANALYSES
(GPAS INPUT VARIABLES)

This section of the report describes the results of pre and post assessment comparisons of data derived from administration of the various forms of the Principal Performance Description Survey - Form I instruments. All principals participating in the FOCUS program were administered the PPDS - Principal Form I instrument which contained 338 statements of principal competency (performance) for which two ratings were to be provided: Frequency of Performance (1--Never to 5--Very Often) and Effectiveness of Performance (1--Ineffective to 5--Very Effective). Teachers in each principal's school were administered the PPDS - Teacher Form I instrument which consisted of 117 statements of principal performance for which ratings were to be provided using rating scales identical for those for the PPDS - Principal Form. In addition, each principal was administered the PPDS - External Observer Form I instrument in an interview setting which yielded "product" ratings (1--Informal to 4--Product) for a maximum of 155 principal performances. Thus, pre and post assessment data were obtained from three competency assessment sources: 1) the principal himself, 2) all teachers in a principal's individual school, and 3) an external observer. The specific format of the PPDS - Form I instruments is the same as that used for the PPDS - Form II instruments included in Appendix I of this report, though the item content is different.

Scoring Procedures

For purposes of the external evaluation results reported here, scores on the various PPDS instruments were derived in several ways, each having implications for inferences about the impact of the FOCUS training program. One scoring procedure used was to aggregate individual items on a PPDS instrument into their original bivariate classification by both Functional Areas of Administrative Responsibility and Administrative Operations composites. Composite scores were computed by summing all item ratings and deriving a total "composite" score for the various Functional Areas and Operations. This allowed for a comparison of "general" areas of competence in terms of both frequency and effectiveness ratings for the PPDS - Principal and Teacher Form I instruments. Since the number of items comprising a particular competency composite varied from one Functional Area or Administrative Operation to another, average item ratings for particular composites were computed to make within instrument comparisons. Similarly, converting total composite scores to percentage of maximum possible scores allows for a comparison of composite ratings between instruments. These techniques will become more clear when describing results of the PPDS administration. The PPDS - External Observer instrument was similarly scored, but yields only one score per item (product rating) rather than two (both frequency and effectiveness ratings).

Another scoring procedure used in analyzing the data reported here was to compute FACT (Functional Area Category Title) scores for those FACTs represented by performance statements on a particular PPDS instrument. This procedure was followed because of the manner in which the Consequence Analysis model included FACT statements at points in the problem-solving process. In addition, because of the need to examine individual competency (FACT) indicator statements included in the FOCUS program, individual indicator scores for the various PPDS instruments were computed. This allowed for an examination of pre and post assessment differences between participants on the very performance indicators from which instructional objectives in the FOCUS program were derived. Results of pre and post assessments with each PPDS instrument are discussed below.

Results of Principal Performance Description Survey - Principal Form I Administration

Each principal participating in the FOCUS program was administered the PPDS - Principal Form instrument in the Fall of 1976 and again in May, 1976. As mentioned above, this instrument contained 338 high-priority statements of principal performance for which two ratings were provided: Frequency of Performance and Effectiveness of Performance. A summary of pre and post assessment scores for principal performance statements classified by Functional Areas of Administrative Responsibility is presented in Table 13 and 14. The data in Table 13 for frequency of performance ratings strongly support the fact that FOCUS principals perceived themselves as more frequently carrying out a wide variety of performances in the school at the termination of the FOCUS program, than at its inception. Six of the seven functional areas classifications on the PPDS - Principal Form I instrument yielded post assessment scores significantly higher than pre assessment scores ($p<.05$). The System-wide Policies and Operations composite scores, though not statistically different, were in the hoped-for direction. These data represent somewhat surprising findings since the pre assessment scores were generally rather high considering the total maximum possible score on the instrument, thus reducing the amount of post assessment gain possible. In terms of their own self-ratings, these principals perceived themselves as more frequently performing activities in a wide variety of functional areas of administrative responsibility at the end of the field-based training program than at its beginning.

TABLE 13

Summary of Pre and Post Assessment Scores for the PPDS - Principal Form Composites
by Functional Areas of Administrative Responsibility (Frequency Ratings)
(n=12 principals)

	Pre Assessment				Post Assessment			
PPDS - Principal Form Subscales Functional Areas of Administrative Responsibility	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score
1. Curriculum and Instruction (74)[1]	325.33	34.62	4.40	87.93	357.17	12.24	4.83	96.53 *
2. Staff Personnel (56)	242.17	24.68	4.32	86.49	262.17	14.06	4.68	93.63 *
3. Pupil Personnel (66)	306.33	20.12	4.64	92.83	320.83	11.65	4.86	97.22 *
4. Support Management (8)	35.00	4.57	4.38	87.50	38.42	2.35	4.80	96.05 *
5. School-Community Interface (6)	23.67	2.93	3.95	78.90	27.92	2.50	4.65	93.06 *
6. Fiscal Management (74)	318.17	38.56	4.30	85.99	333.58	32.05	4.51	90.16 *
7. System-wide Policies and Operations (54)	237.42	20.61	4.40	87.93	241.67	27.07	4.48	89.50

[1] Number of items comprising subscale

*Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

TABLE 14

Summary of Pre and Post Assessment Scores for the PPDS - Principal Form Composites by Functional Areas of Administrative Responsibility (Effectiveness Ratings) (n=12 principals)

PPDS - Principal Form Subscales Functional Areas of Administrative Responsibility	Pre Assessment				Post Assessment				
	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score	
1. Curriculum and Instruction (74)[1]	199.42	46.45	2.66	53.90	251.67	75.06	3.40	68.01	*
2. Staff Personnel (56)	182.00	22.19	3.25	65.00	204.75	40.12	3.66	73.13	*
3. Pupil Personnel (66)	232.22	23.82	3.52	70.40	236.50	61.48	3.58	71.67	
4. Support Management (8)	27.33	11.87	3.42	68.33	31.25	6.15	3.91	78.13	
5. School-Community Interface (6)	19.00	3.41	3.16	63.33	20.17	8.41	3.36	67.73	
6. Fiscal Management (74)	256.17	34.13	3.46	69.24	221.25	105.43	2.99	59.80	
7. System-wide Policies and Operations (54)	154.92	31.64	2.87	57.38	199.67	45.73	3.70	45.73	*

[1] Number of items comprising subscale

*Pre and post-test $\overline{X}$ comparisons significantly different from zero ($p < .05$)

Table 14 summarizes pre and post assessment scores for principals' own *effectiveness of performance* ratings for the PPDS - Principal Form I *Functional Areas of Administrative Responsibility*. Again, some statistically significant differences between pre and post assessments were evidenced when comparing pre and post data. It might be noted that all of the composite ratings were in the predicted direction (i.e., post assessment scores higher than pre assessment scores), except for the *Fiscal Management* classification. Pre and post assessment differences for the *Curriculum and Instruction*, *Staff Personnel*, and *System-wide Policies and Operations* composites were significantly different ($p<.05$), in the direction of higher post test mean scores. As with the *frequency of performance* ratings, principals participating in the FOCUS training program generally perceived themselves as more effectively carrying out a wide variety of performances at the termination of the program than at its beginning.[*]

It will be recalled that the 338 principal performance statements comprising the PPDS - Principal Form I instrument were classified by *both Functional Areas of Administrative Responsibility and Administrative Operation* on the basis of statement content. Thus, subscale scores were derived for each classification schema. Pre and post assessment scores for the *Administrative Operations* subscale for *frequency* and *effectiveness* of performance ratings are presented in Tables 15 and 16, respectively. The data in Table 15 indicate that FOCUS principals' post assessment scores for *every Administrative Operations* subscale were significantly higher ($p<.05$) than pre assessment scores. To reiterate, these are

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[*] In comparing frequency and effectiveness of performance scores for *either* the PPDS - Principal or Teacher Forms, the reader should remember that Effectiveness of performance ratings will be generally *lower* than Frequency of performance ratings because of the scoring procedure applied. Principals and teachers were instructed to omit the Effectiveness rating for any item given a Frequency rating of 1--NEVER.

TABLE 15

Summary of Pre and Post Assessment Scores for the PPDS - Principal Form Composites
by Administrative Operations (Frequency Ratings)
(n=12 principals)

	Pre Assessment				Post Assessment				
PPDS - Principal Form Subscales Administrative Operations	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	
1. Data Collecting (39)[1]	169.75	18.61	4.35	87.05	186.83	6.48	4.79	95.81	*
2. Planning (49)	205.75	27.48	4.20	83.98	219.67	22.61	4.48	89.66	*
3. Communicating (101)	445.67	44.55	4.41	88.25	479.67	21.12	4.74	94.98	*
4. Decision Making (45)	205.08	17.51	4.56	91.14	208.67	15.97	4.64	92.74	*
5. Implementing (64)	284.25	22.73	4.44	88.83	299.83	16.26	4.68	93.70	*
6. Evaluating (40)	177.58	11.97	4.44	88.79	187.08	14.49	4.68	93.54	*

[1] Number of items comprising subscale

*Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

TABLE 16

Summary of Pre and Post Assessment Scores for the PPDS - Principal Form Composites
by Administrative Operations (Effectiveness Ratings)
(n=12 principals)

PPDS - Principal Form Subscales Administrative Operations	Pre Assessment $\bar{X}$	Pre Assessment S.D.	Pre Assessment Average Item Rating	Pre Assessment $\bar{X}$ as % of Maximum Possible Score	Post Assessment $\bar{X}$	Post Assessment S.D.	Post Assessment Average Item Rating	Post Assessment $\bar{X}$ as % of Maximum Possible Score	
1. Data Collecting (39)[1]	121.08	15.34	3.10	62.09	137.25	35.61	3.52	70.38	
2. Planning (49)	135.42	32.85	2.76	55.27	144.92	60.70	2.96	59.15	
3. Communicating (101)	325.92	32.96	3.23	64.54	373.08	78.10	3.69	73.88	*
4. Decision Making (45)	137.67	28.11	3.06	61.19	148.83	40.14	3.31	66.15	
5. Implementing (64)	239.17	19.88	3.74	90.37	228.50	61.75	3.57	71.41	
6. Evaluating (40)	111.92	23.52	2.80	55.96	132.67	34.58	3.32	66.34	*

[1] Number of items comprising subscale

* Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

somewhat surprising findings since pre assessment scores were generally quite high for the various *Administrative Operations* composites (see percentage maximum possible column). The data does support, however, the fact that these principals perceived themselves as *more frequently* participating in the wide variety of performances comprising the various *Administrative Operations* composites *at the end* of the program, than at its inception.

A summary of pre and post assessment scores for the PPDS - Principal Form I *Administrative Operations* composites *effectiveness of performance* ratings is presented in Table 16. Post assessment means were higher than pre assessment means for each of the composites except *Implementing*. The *Communicating* and *Evaluating* subscale scores were significantly different ($p<.05$) and in the predicted direction. Apparently these principals perceived that they were *more effectively* carrying out the wide variety of performances comprising the various *Administrative Operations* subscales *at the termination* of the program, than at its beginning.

In summary, a comparison of pre and post assessment scores for the PPDS - Principal Form I instrument provided strong evidence that the FOCUS participants perceived themselves as more frequently and effectively performing the set of 338 verified principal behaviors at the end of the FOCUS program. While difficult to attribute these changes in self-perceptions of competence to the FOCUS program alone, the findings do strongly suggest that participants saw themselves as "more competent" at the end of the program than at its beginning. To the extent that this finding is consistent with competency assessments from other sources, it is considered most encouraging.

As mentioned in the scoring procedures section of this chapter, a second type of pre and post assessment comparison for the PPDS - Principal Form I instrument was made by aggregating the instrument items according to their respective Functional Area Category Title (FACT) classifications. This process allowed for a pre and post assessment comparison on all 68 PPDS - Principal Form I FACTS as well as on the specific FACT statements from which the FOCUS program core objectives were derived. It should also be remembered that both frequency and effectiveness of performance scores were derived for each of the 68 PPDS - Principal Form I FACT classifications.

The results of the pre and post assessment analysis of the FACT structure of the PPDS - Principal Form instrument for the FOCUS participants indicated that statistically significant differences ($p<.05$) for frequency of performance ratings on specific FACTS from which the program core objectives were derived did not occur. However, post assessment scores for these FACTS (frequency ratings) were all higher than pre assessment scores. As regards the complete FACT structure of the instrument, significantly higher ($p<.05$) post assessment means were found for frequency of performance ratings for 6 of the 68 FACT statements. These particular FACTS were: 1) Lower Staff Decision-Making and Organizational Responsibilities, 2) Staff Professional Identification and Development, 3) Financial Resources and Staffing Needs, 4) Compatibility of System and School Goals and Objectives, 5) Staff Decision-Making Responsibilities, and 6) System Assigned Subject Matter Specialists. For frequency of performance ratings for the complete PPDS - Principal Form I instrument, 71% (48 of 68 possible) of the FACT scores showed higher post assessment than pre assessment means, an encouraging finding considering the small number of principals in the program (n=12) on which the comparisons were made.

For the effectiveness of performance ratings, pre and post assessment means for the specific FACTS on which the FOCUS program core objectives were based did not significantly differ, though post assessment scores were all slightly higher. As regards the complete FACT structure of the PPDS - Principal Form I instrument, significantly higher ($p<.05$) post assessment means were found for the effectiveness of performance ratings for 11 of the 68 FACT statements. These particular FACTS were: 1) Standardized Instruments and the Evaluation of Educational Program, 2) Teachers' and Students' Academic Performance Criteria, 3) Lower Staff Decision-Making and Organizational Responsibilities, 4) Staff Professional Identification and Development, 5) Informal Principal/Student Interaction, 6) Delegation of Authority for Internal Accounting, 7) Compatibility of System and School Goals and Objectives, 8) Staff Decision-Making Responsibilities, 9) Superintendent and Recommendations Concerning Prospective Employees, 10) Superintendent and Planning System Educational Goals, and 11) Long-Range System Planning and Current School Problems. It might be noted here, that four of the above FACT statements (numbers 3, 4, 7, and 8) were the same as those for frequency of performance ratings. For effectiveness of performance ratings for the complete PPDS - Principal Form I instrument, 79% (54 of 68 possible) of the FACT scores showed higher post assessment than pre assessment means, an encouraging finding considering the small number of participants (n=12) on which the comparisons were made.

In summary, the pre and post assessment analyses of the PPDS - Principal Form I FACT structure indicated some significant changes in competency perception by principals participating in the FOCUS program, though the differences for FACTS from which specific FOCUS program core objectives were derived were not statistically significant. Each of these scores, however, was at least in the hoped-for and predicted direction. In addition, overall global changes in the direction of higher post assessment than pre assessment FACT scores were noted for a large percentage of the FACTS comprising the instrument. Apparently FOCUS participants saw themselves as both more frequently and effectively carrying out performances subsumed under the individual FACTS at the termination of the FOCUS program, than at its beginning.

For the particular FACTS comprising the FOCUS training program core objectives, pre and post assessment comparisons were also made for each specific FACT indicator statement (see pages 51 and 52 for a listing of these indicators statements). For the frequency of performance ratings, statistically significant differences ($p<.05$) in favor of post assessment means were noted for the following 3 FACT indicators: 1) Determines desirable curriculum changes based on classroom observation, teacher discussion, etc., 2) Schedules released time for teachers to plan for and revise courses during the regular school day, and 3) Organizes faculty committees to evaluate curriculum content. For the effectiveness of performance ratings, statistically significant differences in favor of higher post assessment means were noted for the following 2 FACT indicators: 1) Encourages teachers to generate new curriculum ideas, and 2) Determines curriculum needing modification. Considering the total of 15 indicator statements for the four FOCUS FACT objectives, post assessment means were higher than pre assessment means for 8 frequency of performance ratings and 11 effectiveness of performance ratings, though some of these differences were rather small.

When considering the results of comparing FOCUS participants' pre and post assessment PPDS - Principal Form I scores in a variety of ways, it appears that their self-perceptions of "competence" were higher at the end, than at the beginning of the FOCUS program. This finding held for both frequency and effectiveness of performance rating scales. As previously mentioned, though difficult to attribute these changes in principals' self-perceptions of performance to elements of the FOCUS program without additional controls, the results do strongly support the fact that changes occurred in the hoped-for direction. A clearer understanding of the degree to which changes in self-perceptions of "competence" can be attributed to elements in the FOCUS training program should be forthcoming after the second application of the GPAS to program participants during the 1976 - 1977 project year.

Results of Principal Performance Description Survey - Teacher Form I Administration

The Principal Performance Description Survey (PPDS) - Teacher Form I instrument was administered on a pre and post assessment basis to all teachers within schools of principals participating in the FOCUS training program. Approximately 85% (n=244) of the teachers returned the completed instrument as requested. The PPDS - Teacher Form I instrument consisted of 117 statements of principal performance for which both frequency and effectiveness of performance ratings were obtained. As with the PPDS - Principal Form I instrument, several different pre and post assessment scores were derived for the PPDS - Teacher Form I to assess changes in the total sample of teachers' perceptions of their principal's "competency." In addition, since one of the objectives of the FOCUS program stated that principals would identify and work with a committee of teachers on an identified school problem, "special project" teachers were compared to "non-project" teachers on a post assessment only basis. It was predicted that post assessment scores on the PPDS - Teacher Form I instrument for the total teacher sample would be significantly higher than pre assessment scores. Also, it was hoped that "special project" teachers would rate their principal's performance significantly higher than other teachers in the sample if the FOCUS participants were indeed having an impact on teacher perceptions of competence...an impact assumedly brought about through the effect of the FOCUS program on principal behavior in the school setting.

A summary of pre and post assessment scores for the Functional Areas of Administrative Responsibility composites of the PPDS - Teacher Form I instrument for frequency and effectiveness of performance ratings is presented in Tables 17 and 18, respectively. The data are derived from 244 teachers (both elementary and secondary) in 12 schools. A t test for correlated means was used to test pre and post assessment composite means for statistical significance.

TABLE 17

Summary of Pre and Post Assessment Scores for the PPDS - Teacher Form Composites by Functional Areas of Administrative Responsibility (Frequency Ratings) (n=244 teachers)

	Pre Assessment				Post Assessment				
PPDS - Teacher Form Subscales Functional Areas of Administrative Responsibility	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	
1. Curriculum and Instruction (35)[1]	98.65	19.76	2.82	56.37	106.27	16.85	3.04	60.72	*
2. Staff Personnel (40)	119.99	17.55	4.00	86.53	125.97	19.81	3.15	62.99	
3. Pupil Personnel (17)	53.00	6.42	3.12	62.35	54.85	7.43	3.23	64.52	
4. Support Management (0)	------[2]	-----	----	-----	------	-----	----	-----	
5. School-Community Interface (1)	4.33	.44	.87	96.60	4.13	.31	.83	82.60	*
6. Fiscal Management (9)	25.11	4.46	2.79	55.80	25.81	3.94	2.87	57.40	
7. System-wide Policies and Operations (15)	42.10	7.50	2.81	56.13	46.03	5.95	3.07	61.37	*

[1] Number of items comprising subscale

[2] No items were classified for this subscale

*Pre and Post-test $\bar{X}$ comparisons significantly different from zero ($p<.05$)

TABLE 18

Summary of Pre and Post Assessment Scores for the PPDS - Teacher Form Composites by Functional Areas of Administrative Responsibility (Effectiveness Ratings)
(n=244 teachers)

PPDS - Teacher Form Subscales Functional Areas of Administrative Responsibility	Pre Assessment				Post Assessment				
	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	
1. Curriculum and Instruction (35)[1]	97.18	25.00	2.78	55.53	106.97	16.36	3.06	61.13	*
2. Staff Personnel (40)	117.21	23.67	4.28	85.66	127.80	17.61	3.20	87.15	*
3. Pupil Personnel (17)	52.64	10.08	3.10	61.93	55.71	7.93	3.28	65.54	
4. Support Management (0)	-----[2]	-----	-----	-----	------	------	-----	------	
5. School-Community Interface (1)	4.31	.45	4.31	86.20	4.24	.38	4.24	84.80	
6. Fiscal Management (9)	25.23	4.82	2.80	56.07	26.52	5.05	2.94	58.93	
7. System-wide Policies and Operations (15)	42.88	8.62	2.86	57.17	46.05	6.24	3.07	61.40	*

[1] Number of items comprising subscale

[2] No items were classified for this subscale

*Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

Viewing the data in Table 17, it can be seen that post assessment scores (frequency of performance ratings) were higher than pre assessment scores for all PPDS - Teacher Form I functional areas composites, with the exception of the School-Community Interface classification. This particular composite (School-Community Interface) is not considered too meaningful within the context of the pre and post assessment since it only consisted of one item. Statistically significant differences in the direction of higher post assessment scores were noted for the Curriculum and Instruction and System-Wide Policies and Operations composites.

For the effectiveness of performance ratings (Table 18), the same general findings were evidenced, with the addition of a statistically significant difference for the Staff Personnel classification of principal performances. The findings for the Curriculum and Instruction composite are most encouraging since the major emphasis of the FOCUS program was in this general training area. Apparently the sample of teachers within the 12 FOCUS participants' schools perceived their principals as more frequently and effectively demonstrating a large number of behaviors in the curriculum and instruction area at the end of the FOCUS program, than at its beginning.

Additional support for the impact of the FOCUS training program on principal performance is provided in Tables 19 and 20. These tables compare post assessment scores for the Functional Areas of Administrative Responsibility (frequency and effectiveness ratings) composites of the PPDS - Teacher Form I instrument for "project" and "non-project" teachers. As can be seen in the tables, project teachers rated their principals' performances as more frequently (Table 19) and effectively (Table 20) occurring in all functional areas of administrative responsibility, than non-project teachers. Statistically significant differences between the two teacher groups for both frequency and effec-

TABLE 19

Summary of Post Assessment PPDS - Teacher Form Composite Scores by Functional Areas of Administrative Responsibility (Frequency Ratings) for FOCUS Non-Project and Project Teachers

PPDS - Teacher Subscales Functional Areas of Administrative Responsibility	Non-Project Teachers (n=201)				Project Teachers (n=29)			
	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score
1. Curriculum and Instruction (35)[1]	104.16	41.42	2.98	59.52	117.81	38.75	3.37	67.32 *
2. Staff Personnel (40)	123.07	42.78	3.08	61.53	131.73	43.78	3.29	65.86
3. Pupil Personnel (17)	53.55	18.34	3.15	63.00	59.73	17.77	3.51	70.27 *
4. Support Management (0)	-----[2]	-----	----	-----	------	-----	----	-----
5. School-Community Interface (1)	4.03	1.09	4.03	80.60	4.26	1.04	4.26	85.20
6. Fiscal Management (9)	25.58	11.19	2.84	56.84	28.73	11.31	3.19	63.84
7. System-wide Policies and Operations (15)	45.14	16.38	3.01	60.18	48.73	16.04	3.25	64.97

[1] Number of items comprising subscale

[2] No items were classified for this subscale

*Pre and post-test X comparisons significantly different from zero ($p < .05$)

TABLE 20

Summary of Post Assessment PPDS - Teacher Form Composite Scores by Functional Areas of Administrative Responsibility (Effectiveness Ratings) for FOCUS Non-Project and Project Teachers

PPDS - Teacher Form Subscales Functional Areas of Administrative Responsibility	Non-Project Teachers (n=201)				Project Teachers (n=29)			
	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score
1. Curriculum and Instruction (35)[1]	104.69	44.11	2.99	59.82	119.36	47.28	3.41	68.20 *
2. Staff Personnel (40)	123.78	48.33	3.09	61.80	136.21	52.15	3.41	68.11
3. Pupil Personnel (17)	54.24	20.09	3.19	63.80	59.69	23.06	3.51	70.22
4. Support Management (0)	-----[2]	-----	----	-----	------	-----	-----	-------
5. School-Community Interface (1)	4.08	1.01	4.08	81.60	4.65	.69	4.65	93.00 *
6. Fiscal Management (9)	25.93	12.18	2.88	57.62	29.96	13.59	3.33	66.58
7. System-wide Policies and Operations (15)	44.86	17.93	2.99	59.81	50.48	20.87	3.37	67.31

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[1] Number of items comprising subscale

[2] No items were classified for this subscale

* Pre and post-test $\bar{X}$ comparison significantly different from zero ($p < .05$)

tiveness ratings were noted for principals' performances in the Curriculum and Instruction area. Apparently the FOCUS program had the general effect of positively impacting on principals' behavior (particularly in the curriculum and instruction area), as well as on teachers' perception of that behavior. Given the "pilot" nature of the application of the GPAS to the FOCUS program, these findings are most encouraging.

Tables 21 and 22 summarize pre and post assessment scores for the PPDS - Teacher Form I Administrative Operations composites for the total teacher sample for frequency and effectiveness of performance ratings, respectively. As with the functional areas classification findings, data for the administrative operations composites indicate that teachers as a group were more positive during post assessment in their perceptions of both the frequency (Table 21) and the effectiveness (Table 22) with which their principals carried out a variety of performances in the school.

For the frequency ratings of various administrative operations (Table 21), statistically significant differences in terms of higher post assessment scores were noted for the Planning, Communicating, and Implementing composites of the PPDS - Teacher Form I instrument. For the effectiveness of performance ratings (Table 22), post assessment composite scores were significantly higher ($p<.05$) for all administrative operations composites with the exception of Evaluating. Apparently teachers in this sample saw the majority of their principals' performances as both more frequently and effectively occurring at the end of the FOCUS program, than at its beginning. In addition, teachers were generally more cohesive in these judgments during post assessment than pre assessment, as inferred from the somewhat smaller post assessment standard deviation scores.

TABLE 21

Summary of Pre and Post Assessment Scores for the PPDS - Teacher Form Composites by Administrative Operations (Frequency Ratings)
(n=244 teachers)

	Pre Assessment				Post Assessment			
PPDS - Teacher Form Subscales Administrative Operations	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score
1. Data Collecting (13)[1]	36.69	7.85	2.82	56.45	38.30	6.32	2.95	58.92
2. Planning (7)	20.03	4.29	2.86	57.23	20.40	3.54	2.91	58.29 *
3. Communicating (74)	213.24	33.07	2.88	57.63	227.19	33.77	3.07	61.35 *
4. Decision Making (0)	-----[2]	----	----	-----	------	-----	----	-----
5. Implementing (21)	62.00	9.63	2.95	59.04	67.37	9.65	3.20	64.16 *
6. Evaluating (2)	6.95	1.40	3.48	69.50	6.86	1.01	3.43	68.60

[1] Number of items comprising subscale

[2] No items were classified for this subscale

*Pre and post-test $\overline{X}$ comparisons significantly different from zero ($p < .05$)

TABLE 22

Summary of Pre and Post Assessment Scores for the PPDS - Teacher Form Composites by Administrative Operations (Effectiveness Ratings)
(n=244 teachers)

PPDS - Teacher Form Subscales Administrative Operations	Pre Assessment				Post Assessment			
	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score	$\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score
1. Data Collecting (13)[1]	35.24	8.06	2.71	54.22	38.37	6.15	2.95	59.03 *
2. Planning (7)	19.97	4.34	2.85	57.06	21.45	3.59	3.06	61.29 *
3. Communicating (74)	212.55	42.91	2.87	57.45	232.17	33.47	3.14	62.75 *
4. Decision Making (0)	-----[2]	-----	-----	-----	------	-----	-----	------
5. Implementing (21)	61.00	11.97	2.90	58.10	67.73	9.19	3.23	64.50 *
6. Evaluating (2)	7.15	1.19	.72	71.50	7.27	1.03	.73	72.70

[1] Number of items comprising subscale

[2] No items were classified for this subscale

* Pre and Post-test $\overline{X}$ comparisons significantly different from zero ($p < .05$)

Additional support for the overall positive impact of the FOCUS program is provided in Tables 23 and 24, which compare "non-project" and "project" teachers' post assessment scores on the administrative operations composites of the PPDS - Teacher Form I instrument. As can be seen in these tables, project teachers rated principals higher on all composites for both frequency (Table 23) and effectiveness (Table 24) of performance. For the frequency of performance ratings (Table 23) a statistically significant difference was noted for the Implementing classification. For the effectiveness of performance ratings (Table 24), statistically significant differences in favor of the project teacher group were found for the Planning and Evaluating composites. While other differences between these two teacher groups were not large enough to reach significance at the .05 level, they do demonstrate the generally more positive perceptions of project than non-project teachers of their principals' behavior in the school setting. When combined with the pre and post assessment comparisons made above, these data support the effectiveness of the FOCUS program in both changing principals' behavior in a wide variety of functional areas of administrative responsibility and administrative operations, as well as teachers' perceptions of that behavior.

As mentioned in the scoring procedures section of this chapter, a second type of PPDS - Teacher Form I score was computed by aggregating the instrument items according to their FACT classification. As with the Principal PPDS Form I instrument, this classification and scoring procedure allowed for a pre and post assessment comparison of teacher responses for all 50 FACTs, as well as for the specific FACTs around which the FOCUS core objectives were structured. It should be remembered that both frequency and effectiveness of performance scores were obtained for each of the 50 FACTs on the PPDS - Teacher Form I instrument.

TABLE 23

Summary of Post Assessment PPDS - Teacher Form Composite Scores by Administrative Operations (Frequency Ratings) for FOCUS Non-Project and Project Teachers

PPDS - Teacher Form Subscales Administrative Operations	Non-Project Teachers (n=201) $\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score	Project Teachers (n=29) $\overline{X}$	S.D.	Average Item Rating	$\overline{X}$ as % of Maximum Possible Score
1. Data Collecting (13)[1]	37.18	14.59	2.86	57.20	41.85	14.15	3.22	64.38
2. Planning (7)	21.05	8.03	3.01	60.14	23.08	8.55	3.30	65.94
3. Communicating (74)	221.67	85.13	3.00	59.91	244.92	79.30	3.31	66.19
4. Decision Making (0)	------[2]	-----	----	-----	------	-----	----	-----
5. Implementing (21)	65.70	22.78	3.13	62.57	74.19	21.99	3.53	70.65 *
6. Evaluating (2)	6.65	2.39	3.33	66.50	6.96	2.47	3.48	69.60

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[1] Number of items comprising subscale

[2] No items were classified for this subscale

*Pre and post-test $\overline{X}$ comparison significantly different from zero ($p < .05$)

TABLE 24

Summary of Post Assessment PPDS - Teacher Form Composite Scores by Administrative Operations (Effectiveness Ratings) for FOCUS Non-Project and Project Teachers

PPDS - Teacher Form Subscales Administrative Operations	Non-Project Teachers (n=201) $\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	Project Teachers (n=29) $\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	
1. Data Collecting (13)[1]	37.13	16.67	2.86	57.12	42.17	18.48	3.24	64.88	
2. Planning (7)	21.09	8.43	3.01	60.26	24.93	8.38	3.56	71.23	*
3. Communicating (74)	225.59	90.04	3.05	60.97	253.68	98.30	3.43	68.56	
4. Decision Making (0)	-----[2]	-----	----	-----	------	-----	----	-----	
5. Implementing (21)	65.92	24.06	3.14	62.78	73.97	25.69	3.52	70.44	
6. Evaluating (2)	6.94	2.54	3.47	69.40	7.96	2.19	3.98	79.60	*

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[1] Number of items comprising subscale

[2] No items were classified for this subscale

* Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

The results of the pre and post analysis of the FACT structure of the PPDS - Teacher Form I instrument for frequency of performance ratings, indicated that 40% (20 of a possible 50) of the post assessment scores were higher than pre assessment scores, though some of these differences were admittedly rather small. Only 5 FACTs yielded statistically significant ($p<.05$) differences in the direction of post assessment scores. These 5 FACTs were: 1) Teachers and the Design of Instructional Evaluation Methods, 2) Modification of Curriculum Content and Organization, 3) Superintendent and School Staff Tenure/Dismissal, 4) Board of Education Recommendations and the Revision of Educational Plans, and 5) Compatibility of System and School Goals and Objectives. Of the four FACTs from which the FOCUS training program core objectives were derived, only one demonstrated significantly higher post assessment frequency of performance ratings by teachers: Modification of Curriculum Content and Organization. Though it was hoped that principals would be rated by teachers during post assessment as more frequently performing activities subsumed under each of these FOCUS FACTs, the singular finding above is encouraging considering the "pilot" nature of the FOCUS program.

For the effectiveness of performance PPDS - Teacher Form I instrument FACT scores, 34% (17 of a possible 50) of the post assessment scores were higher than the pre assessment scores, though again some of these differences were rather small. Only 3 FACTs yielded significantly higher ($p<.05$) post assessment means. These 3 FACTs were: 1) Modification of Curriculum Content and Organization, 2) Staff Evaluation and In-Service Training, and 3) Student Information System and Pupil Personnel Services. It is interesting to note here that the FACT, Modification of Curriculum Content and Organization yielded significantly higher post assessment effectiveness of performance ratings by teachers.

In summary, the pre and post assessment analyses of the PPDS - Teacher

Form I FACT structure indicated some significant positive changes in teachers' perceptions of principals' competencies occurred, though these were not as frequently occurring as principals' own self-ratings on the PPDS - Principal Form I instrument.

For the 4 FACTs comprising the FOCUS training program core objectives, pre and post assessment comparisons were also made for each of the 7 specific FACT performance indicator statements appearing on the PPDS - Teacher Form I instrument. For the frequency of performance FACT ratings, all seven post assessment means were higher than pre assessment means. Statistically significant differences in the direction of post assessment scores were noted for 2 FACT indicator statements. These indicators were: 1) Schedules released time for teachers to plan for and revise courses during regular school day and 2) Appoints faculty committee to review curriculum content and organization and recommend needed changes.

When considering the variety of pre and post assessment comparisons made with the PPDS - Teacher Form I instrument, strong support for a positive change in teacher perceptions of both the frequency and effectiveness with which their principals performed, was noted. The pre and post assessment comparisons of the PPDS - Teacher Form instrument items classified by Functional Area of Administrative Responsibility and Administrative Operation seemed to yield the most clear and meaningful data when compared to FACT and FACT indicator analyses. This can partly be attributed to an increase in possible score variability when items are aggregated into these larger composites. However, some evidence appeared supporting the general positive impact of the FOCUS program on the participating principals' behavior and teachers' perceptions of its occurrence in the school setting.

Results of Principal Performance Description Survey - External Observer (EO) Form I Administration

A third form of input about performances of principals participating in the FOCUS field-based training program was in the form of "product" ratings for competency performance indicator statements comprising the PPDS - External Observer (EO) Form I instrument. The EO instrument consisted of 155 principal performance statements for which product scores ranging from 1--Informal to 4--Product were obtained from a given principal by a R.O.M.E. assessment staff member during a structured interview situation. The PPDS - EO instrument was administered on a pre and post assessment basis in the early Fall of 1975 and in the late Spring of 1976. Like the PPDS teacher and principal form instruments, the EO yielded scores for Functional Areas of Administrative Responsibility and Administrative Operations, and for FACTs and FACT indicator statements. Each of these pre and post assessment scores was compared to assess changes in FOCUS participants' behavior during the course of the FOCUS experience. The rationale of the EO instrument required a principal to produce for an observer (interviewer), concrete, tangible, directly observable evidence that a given principal performance had been carried out in the school, in order to obtain a maximum item score of 4--Product. These item scores were aggregated by Functional Area and Administrative Operations composites and by FACT in order to make pre and post assessment performance comparisons.

Table 25 summarizes pre and post assessment PPDS - EO Form I composite scores by Functional Areas of Administrative Responsibility for the 12 FOCUS principals. As can be seen in the table, post assessment means were higher than pre assessment means for every EO composite except Pupil Personnel. Statistically significant changes were noted for the Support Management and School-Community Interface composites, though the Staff Personnel and Fiscal

TABLE 25

Summary of Pre and Post Assessment PPDS - External Observer Form Composite Scores by Functional Areas of Administrative Responsibility for FOCUS Principals (n=12)

PPDS - External Observer Form Subscales Functional Areas of Administrative Responsibilty	Pre Assessment $\bar{X}$	Pre Assessment S.D.	Pre Assessment Average Item Rating	Pre Assessment $\bar{X}$ as % of Maximum Possible Score	Post Assessment $\bar{X}$	Post Assessment S.D.	Post Assessment Average Item Rating	Post Assessment $\bar{X}$ as % of Maximum Possible Score
1. Curriculum and Instruction (35)[1]	50.25	31.29	1.44	35.89	54.67	22.50	1.56	39.05
2. Staff Personnel (12)	17.75	5.82	1.48	36.98	22.33	7.73	1.86	46.52
3. Pupil Personnel (29)	52.75	16.11	1.82	45.47	50.17	16.40	1.73	43.25
4. Support Management (3)	4.00	4.15	1.33	33.33	9.00	1.55	3.00	75.00 *
5. School-Community Interface (3)	4.91	3.91	1.64	40.92	8.18	2.40	2.72	68.17 *
6. Fiscal Management (44)	77.92	11.76	1.77	44.28	87.83	18.47	1.95	25.16
7. System-wide Policies and Operations (29)	40.83	18.50	1.41	35.20	46.50	16.56	1.60	40.09

[1] Number of items comprising subscale

*Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

Management composite differences closely approximated significance at the .05 level. While these differences were not extremely large, they do provide some evidence that the FOCUS participants had on hand generally more observable evidence to corroborate their performance of particular competency indicators representing certain functional areas of administrative responsibility at the end, than at the beginning of the training program. This finding is encouraging considering the developmental nature of the PPDS - External Observer Form I instrument.

An inspection of average item ratings in Table 25 indicates that these principals tended to score rather low overall on the EO instrument composites, since most all of the composite ratings were below a midpoint average item rating of 2.0 on the 4-point scale.

Table 26 summarizes pre and post assessment PPDS - EO instrument composite scores for the 155 performance indicators classified by Administrative Operations. It seems evident that this classification of items did not produce composite differences as directionally consistent as the functional areas classification. Pre assessment mean composite scores were higher for Data Collecting and Implementing, while post assessment means were higher for Planning, Decision-Making, and Evaluating. Scores neither increased nor decreased for the group of principals on the Communicating composite. Statistically significant differences in favor of post assessment means were noted for the Decision-Making and Evaluating composites. Scores for the Implementing composite were significantly higher ($p<.05$) during pre assessment. These findings are difficult to interpret at best. However, they do indicate that the EO instrument in sensitive to change in the quantity and quality of observable products available to corroborate a given set of principal performances. The sensitivity of the instrument, however, may be hampered by variables affecting its reliability between administrations (e.g., low inter-observer reliability). In addition, variability

TABLE 26

Summary of Pre and Post Assessment PPDS - External Observer Form Composite Scores by Administrative Operations for FOCUS Principals (n=12)

	Pre Assessment				Post Assessment				
PPDS - External Observer Form Subscales Administrative Operations	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	$\bar{X}$	S.D.	Average Item Rating	$\bar{X}$ as % of Maximum Possible Score	
1. Data Collecting (19)[1]	37.25	15.80	1.96	49.01	32.92	8.49	1.73	43.32	
2. Planning (37)	56.00	27.22	1.51	37.84	66.17	21.57	1.78	44.71	
3. Communicating (2)	6.00	2.82	3.00	75.00	6.00	2.82	3.00	75.00	
4. Decision Making (42)	54.33	23.56	1.29	32.34	77.50	19.19	1.84	46.13	*
5. Implementing	64.83	9.04	2.70	67.53	44.67	14.89	1.86	46.53	*
6. Evaluating (31)	31.67	15.65	1.02	25.54	55.08	18.47	1.78	44.42	*

[1] Number of items comprising subscale

*Pre and post-test $\bar{X}$ comparisons significantly different from zero ($p < .05$)

in the direction of the scores in Table 26, when compared to those in Table 25, may represent an artifact of the processes used in classifying the items by various functional areas of responsibility and administrative operations. On the other hand, the administrative operations composite differences may be real. An additional application of a second form of the EO instrument to FOCUS participants during the 1976 - 1977 project year should yield data helpful in clarifying these administration, scoring, and data interpretation difficulties.

The 155 principal performance indicator statements comprising the PPDS - EO instrument were also aggregated by FACT in order to examine pre and post assessment changes in the availability of directly observable performance evidences. For the total FACT structure of the EO instrument, 53% (31 of a possible 58) of the post assessment FACT scores were higher than the pre assessment FACT scores. Post assessment scores were significantly higher ($p<.05$) for the following 14 EO FACTs: 1) Diagnostic and Educational Achievement Testing Program, 2) Student Needs and Curriculum Design, 3) Program for Students' Special Needs and Community Service Agencies, 4) Principal Participation and Attendance at School Activities, 5) Student Cumulative Records, 6) Inspection of School Plant Facilities, 7) Communication with Parents and Local Community, 8) Required Governmental Financial Reports, 9) Budgetary Limits and Instructional Materials and Equipment, 10) Recommendations for Improvement of Physical Facilities, 11) Superintendent and Fiscal Audit Information, 12) School Budget and Legal Requirements, 13) Superintendent and School Staff Tenure/Dismissal, and 14) Superintendent and Recommendations for Physical Facility Improvement. The observation that none of the FACTs from which the FOCUS program core objectives were derived is represented in the above list, is a somewhat surprising finding.

Of the 155 principal performance indicator statements comprising the PPDS -

EO instrument, eight were specific FOCUS FACT indicators. Analysis of pre and post assessment scores for these eight indicators was not too encouraging. Only two of the eight indicators demonstrated higher post assessment than pre assessment means. Neither of these indicators was represented as a FACT indicator in the FOCUS training model. An inspection of pre and post mean scores indicated that *pre assessment means were generally higher than post assessment means*...a possible artifact of the nature of the EO instrument and its administration. At a minimum, it might be expected that pre and post scores would remain approximately the same for these eight indicator statements. However, this was not the case.

General Conclusions of Pre and Post Competency Assessment Analyses

The application of the Principal Performance Description Survey (PPDS) instruments for principals, teachers, and an external observer to participants in the VSC FOCUS training program, produced some supportive results. The original intent of pre and post assessment was to collect data relevant to an external evaluation of the FOCUS program in terms of its impact on increasing principals' "competencies" in a wide variety of areas. As previously mentioned in this chapter, caution must be expressed when attributing changes in competency assessments to the FOCUS program due to the lack of adequate control data. However, and with this reservation, it appears that principals did increase their scores as a group on the various PPDS instruments.

Principals' self-perceptions of both the *frequency* and *effectiveness* with which they performed a variety of activities in their schools were greatly, and significantly increased. To the extent that principals' self-perception of competence eventuates in subsequent performance in the school environment, this is considered an important finding of the assessment.

Principals" self-assessments of greater competence at the end of the FOCUS program were corroborated to a great degree by those of their teachers, particularly in the area of Curriculum and Instruction performances, a major instructional component of the FOCUS field-based training model. The strongest data from teachers concerning the impact of the FOCUS program in changing principals' performance levels stemmed from comparing "special project" to "non-project" teachers. Apparently, teachers working directly with a principal on the solution of school-related problems, perceive and subsequently rate him/her as more frequently and effectively performing a variety of activities, than teachers not working directly with the principal. This finding makes intuitive as well as empirical sense. However, it might be noted that these same teachers could have rated the principal as generally less competent, if this was their perception based on direct experiences with him/her.

Data derived from administration of the PPDS - External Observer Form I instrument was not as encouraging as that from other sources. It was hoped that evidence relevant to Curriculum and Instruction performances would be greater during post than pre assessment. However, this was not generally the case. A pre and post analysis of the FACT structure of the EO instrument provided data generally demonstrating its sensitivity to other areas of the principalship such as Fiscal and Support Management activities. This does not negate its future use in R.O.M.E. assessment efforts, however, some refinement of administration and scoring procedures seems suggested.

Overall, pre and post assessment analyses supported the fact that principals participating in the FOCUS training program were generally perceived as more competent by the variety of sources at the end of the program than at its inception. For a first application of the Georgia Principal Assessment System (GPAS) to a field-based training program for principals on a pilot basis, the data derived from "competency" assessments are quite encouraging. The general sensitivity of the PPDS forms to change in perceptions of principals' behaviors seems well established. In addition, the data "give the appearance" of supporting the impact of the training program on participants' (principals') subsequent performance in the school setting.

ANALYSES OF TEACHER AND STUDENT PERCEPTIONS OF CHARACTERISTICS OF THE SCHOOL WORKING AND LEARNING ENVIRONMENT (GPAS MEDIATING VARIABLES)

Two general levels of criterion variables for the Georgia Principal Assessment System have been defined as Mediating (between principals' performances and student outcomes through teacher morale and school climate/learning environment) and Outcome (student standardized achievement test performance and school attendance). This section of the report describes data summaries for teacher and student responses to the School Survey (teachers), Learning Environment Inventory (secondary students), and the My School inventory (elementary students) derived from a pre and post assessment of schools having principals participating in the FOCUS training program. Summaries of Outcome variable data will not be presented since they were not part of the general FOCUS external evaluation design.

It will be recalled that mediating measures within the GPAS were administered in the Fall of 1975 to provide each FOCUS participant with baseline information to be used for "problem" identification in the school. Consulting with VSC FOCUS supervisors, each FOCUS principal identified a "high-priority", school-related problem using pre assessment data from the School Survey and the Learning Environment Inventory and/or the My School inventory. Contrasts were made between scores on each of these instruments and R.O.M.E. normative data from the 1974 - 1975 GPAS field test. These contrasts provided each FOCUS participant with teacher and student information about the characteristics of the school working and learning environment to be integrated with the FOCUS problem-solving instructional model. In addition, the data served to identify a "problem" area in the school to be used as a general guide for participants' selection of required individual learning modules to supplement other FOCUS training activities.*

In evaluating the FOCUS program, it was hoped that significant changes would be demonstrated between pre and post assessment on dimensions of the GPAS mediating measures, if principal behaviors changed and impacted on the school environment as a result of the FOCUS training program. In each of the sections below, caution should be expressed in attributing pre and post assessment differences on the various mediating variable measures to the FOCUS program, due to the absence of appropriate pre and post control data. However, data for the FOCUS participants is contrasted to "normative" data derived from the much larger 1974 - 1975 GPAS field test in 45 schools. In addition, post assessment only comparisons are made with the sample of 10 schools described in chapter II of this report, since data for these schools were collected at approximately the same time as FOCUS post assessment data were collected.

Contrasts with the larger 1974 - 1975 R.O.M.E. sample allowed for an examination of the FOCUS participants in terms of pre and post assessment differences when compared to a Georgia "norm" for the various measures. Post assessment only comparisons with the sample of 10 schools were made in hopes tha FOCUS principals' teachers and students were significantly more positive in their attitudes towards characteristics of the school environment than those in an essentially comparable system. An examination of student achievement test performance, school ADA, socioeconomic status (inferred from the percentage of students receiving free lunches), and school size indicated that a comparison of post only data from FOCUS schools and the "control" system (n=10 schools) was feasible.

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*A more detailed description of the problem-identification process is available from Dr. Joseph Licata, Department of Educational Administration, Valdosta, State College, Valdosta, Georgia.

Teacher Perceptions of Characteristics of the School Working Environment (Job-Related Satisfactions): The School Survey

The School Survey instrument was administered to all teachers in schools of FOCUS principals on a "take-home" basis allowing from 3 to 5 days for completion. Pre and post assessment data were available from 244 teachers in 12 schools, representing a return rate of about 85 percent of the maximum possible. Since all teacher data were contributed anonymously, school means were used as the units of statistical analysis.

The School Survey is a 118-item inventory that measures teachers' attitudes towards dimensions of their working environment along 14 separate sub-scales. Items were scored from 1--Agree to 3--Disagree, with 2 representing a neutral or "no opinion" score. Thus an assumed neutral or mid-point on any scale is equal to the number of items comprising the scale multiplied by two. The higher the score for any sub-scale, the more positive teachers' attitudes toward that dimension of their work experience and environment. As mentioned above, comparisons of pre and post assessment data were made with the 1974 - 1975 R.O.M.E. sample of 45 schools in the State of Georgia. Post assessment only comparisons were made with the R.O.M.E. 1976 sample of 10 schools.

Table 27 presents a summary of FOCUS pre and post assessment and normative group mean, standard deviation, and difference scores for dimensions of the School Survey instrument administered to elementary and secondary teachers. The reader should note that the table is continued on page 96. Mean difference scores were calculated by subtracting the norm group mean score from pre and post assessment mean scores for each of the School Survey factors. Negative difference scores, thus represent a higher norm than pre or post assessment group mean scores for a given factor. Positive difference scores represent just the opposite. Besides pre and post assessment comparisons with the norm group, pre and post assessment mean comparisons were made using t tests for correlated means.

TABLE 27

Summary of F.O.C.U.S. Pre and Post Assessment and Normative Group Mean, Standard Deviation, and Mean Difference Scores for Dimensions of the School Survey Administered to Teachers

School Survey Factors	Pre Assessment (n=244) $\bar{X}$	Pre Assessment (n=244) S.D.	Difference[3]	Norm[1] (n=1200) $\bar{X}$	Norm[1] (n=1200) S.D.	Difference[3]	Post Assessment (n=244) $\bar{X}$	Post Assessment (n=244) S.D.	
1. Administrative Practices (9)[2]	15.03	2.4	-0.55	15.58	7.2	5.17	20.75	1.5	*
2. Professional Work Load (9)	18.85	1.3	-0.75	19.60	5.0	1.92	21.52	0.8	*
3. Non-Professional Work Load (6)	12.55	1.4	-0.26	12.81	3.8	1.70	14.51	1.3	*
4. Materials and Equipment (8)	13.55	2.3	-2.34	15.89	5.8	1.41	17.30	2.9	*
5. Buildings and Facilities (7)	13.92	2.1	-0.47	14.43	4.5	0.98	15.41	2.3	*
6. Educational Effectiveness (10)	18.61	2.3	-1.67	20.28	6.4	2.08	22.36	1.4	*
7. Evaluation of Students (10)	17.80	1.3	-0.80	18.60	6.3	2.81	21.41	1.6	*
8. Special Services (8)	13.89	2.2	-1.53	15.42	5.2	1.38	16.80	1.8	*

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[1] Normative data derived from R.O.M.E. 1974-1975 field test sample of 1200 teachers in 35 elementary and 10 secondary schools in the State of Georgia.

[2] Number of items on sub-scale

[3] Difference column was calculated by subtracting norm mean from either pre or post assessment mean for each sub-scale

* Pre and Post Assessment $\bar{X}$ sub-scale scores for FOCUS teachers significantly different beyond the .001 level.

TABLE 27 (cont.)

School Survey Factors	Pre Assessment (n=244) $\bar{X}$	Pre Assessment (n=244) S.D.	Difference[3]	Norm[1] (n=1200) $\bar{X}$	Norm[1] (n=1200) S.D.	Difference[3]	Post Assessment (n=244) $\bar{X}$	Post Assessment (n=244) S.D.	
9. School Community Relations (7)[2]	12.25	1.6	-0.84	13.09	5.1	3.80	16.89	0.8	*
10. Supervisory Relations (10)	12.99	3.2	-8.37	21.36	7.2	4.68	26.04	1.9	*
11. Colleague Relations (7)	14.23	2.2	-0.98	15.21	5.0	0.88	16.09	1.8	*
12. Voice in Educational Program (8)	12.96	2.2	-0.27	13.23	5.2	4.42	17.65	1.2	*
13. Performance and Development (10)	18.79	3.2	-1.43	20.22	6.6	3.39	23.61	1.7	*
14. Financial Incentives (9)	11.03	1.1	-3.60	14.63	5.2	0.77	15.40	1.1	*

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[1] Normative data derived from R.O.M.E. 1974-1975 field test sample of 1200 teachers in 35 elementary and 10 secondary schools in the State of Georgia.

[2] Number of items on sub-scale

[3] Difference column was calculated by subtracting norm mean _from_ either pre or post assessment mean for each sub-scale

*Pre and Post assessment $\bar{X}$ sub-scale scores for FOCUS teachers significantly different beyond the .001 level

Asterisks to the extreme right of rows in Table 27 indicate significant differences between pre and post assessment scores for dimensions of the School Survey instrument. The general variation between pre and post assessment and norm group standard deviations for the School Survey factors (larger for norm group) is due to the fact that pre and post assessment data were analyzed using school means as the units of analysis.

Comparing pre and post assessment School Survey scores with those for the 1974 - 1975 R.O.M.E. normative group, several interesting findings emerge. First, FOCUS teachers as a group scored somewhat lower than teachers in the norm group on every dimension of the School Survey during pre assessment. Differences between pre assessment and the larger R.O.M.E. group were most noticeable for the Supervisory Relations, Materials and Equipment, and Financial Incentives factors. Most important in these findings is the much stronger negative attitude of teachers in FOCUS schools during pre assessment towards Supervisory Relations in the school environment, with the pre assessment mean being 8.37 points lower than the norm group.

A second finding of major interest emerged from comparing post assessment scores with the norm data. Teachers in the FOCUS schools showed significant changes in attitudes measured by the School Survey from pre to post assessment, with every mean scale score surpassing that of the norm group. Most noticeable and important among these changes were significantly more positive attitudes toward Administrative Practices, School Community Relations, Supervisory Relations, Voice in Educational Program, and opportunities for professional Performance and Development.

When pre and post assessment scores were compared with t tests for correlated means, significant differences ($p<.05$) were evident for all School Survey scales. Most notable among these significant differences were large changes toward more positive attitudes concerning Administrative Practices and Supervisory Relations. Though difficult to attribute these changes in more positive attitudes solely to the FOCUS program, the findings for the Administrative Practices and Supervisory Relations dimensions make intuitive sense when considering the objectives and structure of the training program.

Table 28 summarizes FOCUS non-project, project, and control group post assessment mean, standard deviation, and mean difference scores for dimensions of the School Survey administered to elementary and secondary teachers. Data for non-project teachers is derived from all teachers except those working on a special project with FOCUS principals during the course of the field-based training program. Project teacher data is derived from teachers identified as working on special committees and projects with the FOCUS principals in order to implement FOCUS objectives. T tests for independent means were computed between these two groups (non-project and project) on each dimension of the School Survey instrument. While project teachers were generally more positive in their attitudes towards the working environment than non-project teachers, a statistically significant ($p<.05$) post assessment difference was found for only the Supervisory Relations dimension of the School Survey. Again, this finding makes intuitive sense because project teachers worked more closely with their principals during the course of the FOCUS program than non-project teachers.

The right hand column in Table 28 represents difference scores for dimensions of the School Survey computed by subtracting mean scores derived from a sample of 10 control schools from FOCUS teacher post assessment scores. This allowed for a post assessment comparison between FOCUS teachers and teachers in a similar school not exposed to principals participating in a field-based training program. As can be seen in the table, statistically significant differences in favor of the FOCUS teachers were found for the School Survey factors of Administrative Practices and Financial Incentives. Apparently the

TABLE 28

Summary of F.O.C.U.S. Non-Project, Project, and Control Group Post Assessment Mean, Standard Deviation, and Mean Difference Scores for Dimensions of the School Survey Instrument Administered to Teachers

	Non-Project Teachers (n=201)		Project Teachers (n=29)		F.O.C.U.S. Total Post Assessment Mean Minus Control Group Mean[1]	
School Survey Factors	$\overline{X}$	S.D.	$\overline{X}$	S.D.	Difference	
1. Administrative Practices (9)[2]	20.61	4.5	20.41	4.3	1.65	*
2. Professional Work Load (9)	21.26	3.8	2.193	0.7	0.10	
3. Non-Professional Work Load (6)	14.41	2.8	14.28	3.1	0.48	
4. Materials and Equipment (8)	16.90	4.6	17.52	4.9	0.79	
5. Buildings and Facilities (7)	15.72	3.6	15.69	3.3	-0.69	
6. Educational Effectiveness (10)	22.11	4.2	22.24	4.1	0.79	
7. Evaluation of Students (10)	21.46	4.6	21.31	5.1	0.18	
8. Special Services (8)	17.18	3.8	16.38	3.6	0.92	

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[1] Sub-scale mean difference scores were computed by aggregating teacher responses within 12 FOCUS and 10 Control schools. Differneces thus represent differences between the grand mean of school means.

[2] Number of items comprising sub-scale

* Sub-scale means statistically significant at .05 level.

TABLE 28 (cont.)

	Non-Project Teachers (n=201)		Project Teachers (n=29)		F.O.C.U.S. Total Post Assessment Mean Minus Control Group Mean[1]
School Survey Factors	$\overline{X}$	S.D.	$\overline{X}$	S.D.	Difference
9. School Community Relations (7)[2]	16.74	2.9	17.03	2.8	0.52
10. Supervisory Relations (10)	25.90	4.5 *	27.38	4.1	0.82
11. Colleague Relations (7)	16.22	3.6	16.79	4.0	-0.68
12. Voice in Educational Program (8)	17.48	3.6	17.55	3.9	0.68
13. Performance and Development (10)	23.63	4.9	23.79	5.2	1.04
14. Financial Incentives (9)	15.67	4.1	14.55	3.7	1.41 *

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[1] Sub-scale mean difference scores were computed by aggregating teacher responses within 12 FOCUS and 10 Control schools. Differences thus represent differences between the grand mean of school means.

[2] Number of items comprising sub-scale

* Sub-scale means statistically significant at .05 level

"year-end" perceptions of FOCUS teachers towards these dimensions of their working environment were significantly more positive than those of teachers in the control school sample.

In summary, several supportive findings resulted from comparing FOCUS teachers' pre and post assessment data with both R.O.M.E. normative and 1976 control samples. FOCUS teachers demonstrated significantly more positive perceptions of all aspects and characteristics of their working environment at the end of the training program, than at its inception. Support for the strength of these changes was evidenced by comparing FOCUS teachers' post assessment School Survey responses to the much larger R.O.M.E. "norm" of 45 elementary and secondary schools from 1974 - 1975. It seems doubtful that these changes would merely result from extraneous factors involved in the passage of time... though this is a possibility.

Support for the impact of FOCUS principals on teacher perceptions was provided by analyzing "project" and "non-project" teacher responses to the School Survey on a post assessment only basis. Teachers identified as working more closely with the principal in implementing FOCUS objectives demonstrated significantly more positive attitudes towards Administrative Practices than other teachers. In addition, FOCUS teachers as a total group had a more positive attitude towards Administrative Practices in their school at the end of the school year, than teachers in a comparative, control sample of 10 schools. Though difficult to attribute these changes to the impact of the FOCUS program on principal behavior, they are, at a minimum, quite encouraging considering the "pilot" nature of both the training model and the assessment system.

Secondary Student Perceptions of Characteristics of the School Climate/Learning Environment: The Learning Environment Inventory

Student perceptions of characteristics of the school climate/learning environment are conceptualized as mediating variables within the general GPAS model. Like teachers and principals from FOCUS schools, secondary students were pre and post assessed in an attempt to measure change in student perceptions of school climate characteristics over the course of the FOCUS training program. Secondary students (grades 8 and 11) were administered the 105-item, 15 scale *Learning Environment Inventory* (LEI) in the Fall of 1975 and again in mid May of 1976. Usable pre and post assessment data were obtained from 852 students in grades 8 and 11 from 5 secondary schools. These data were examined in terms of pre and post assessment changes (differences) and were contrasted to the 1974 - 1975 R.O.M.E. "norm" and the 1976 sample of 1,003 "control" students. It was hoped that significant changes toward more positive perceptions of characteristics of the school climate/learning environment would occur between pre and post assessment, and that students in FOCUS schools would score significantly higher (more positive) than either the R.O.M.E. norm or control groups.

Table 29 presents a summary of pre and post assessment and normative group mean, standard deviation, and mean difference scores for the LEI instrument administered to secondary students in FOCUS schools. Each sub-scale on the LEI consists of seven items, each of which was scored from 1--Strongly Disagree to 4--Strongly Agree. *Higher mean* scores represent *more positive* perceptions of the characteristic implied by the sub-scale label. An assumed neutral or midpoint score on any LEI dimension corresponds to a mean score of 17.50. Difference scores were derived by *subtracting the 1974 - 1975 norm group mean from either the pre or post assessment mean*. Thus, *negative differences* indicate a *higher norm mean* score, and positive differences represent a higher pre or post assessment mean score. Asterisks to the extreme right of the table rows indicate statistically significant differences between pre and post assessment LEI sub-scale mean scores.

TABLE 29

Summary of Pre and Post Assessment and Normative Group Mean, Standard Deviation, and Mean Difference Scores for the Learning Environment Inventory Administered to Secondary Students

Learning Environment Inventory Factors	Pre Assessment			Norm[1]			Post Assessment		
	$\overline{X}$	S.D.	Difference[2]	$\overline{X}$	S.D.	Difference[2]	$\overline{X}$	S.D.	
1. Cohesiveness	18.95	1.50	0.68	18.27	3.2	0.88	19.15	1.00	
2. Diversity	19.31	0.79	-0.82	20.13	2.9	-0.30	19.83	0.32	
3. Formality	19.17	0.64	0.71	18.46	3.0	0.51	18.97	0.41	
4. Speed	17.93	0.73	-0.93	18.86	3.7	-0.49	18.37	0.70	
5. Enviroment	16.78	0.61	1.22	15.56	3.3	0.91	16.47	0.34	
6. Friction	19.38	0.61	-0.75	20.13	3.3	0.06	20.19	0.57	*
7. Goal Direction	17.34	0.64	1.12	16.22	3.4	1.10	17.32	0.35	
8. Favoritism	18.20	0.74	-0.10	18.30	3.7	0.22	18.52	0.53	
9. Cliqueness	19.88	0.54	-1.15	21.03	3.2	-0.17	20.86	0.60	*
10. Satisfaction	16.03	1.02	0.98	15.05	3.1	1.08	16.13	0.65	
11. Disorganization	17.56	0.86	-0.59	18.15	3.6	0.14	18.29	0.89	*
12. Difficulty	17.77	0.16	-0.17	17.94	3.0	0.15	18.09	0.20	*
13. Apathy	17.77	0.32	-0.70	18.47	3.5	0.07	18.54	0.87	*
14. Democraticw	16.09	0.39	1.14	14.95	3.1	0.94	15.89	0.44	
15. Competitiveness	18.67	0.45	0.40	18.27	3.4	0.77	19.04	0.35	

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[1] Normative data derived from R.O.M.E. 1974-1975 field test sample of 3,613 eighth- and eleventh-grade students in the State of Georgia.

[2] Difference column was calculated by subtracting norm mean from either pre or post assessment mean for each sub-scale

* Pre and Post assessment $\overline{X}$ sub-scale for FOCUS students significantly different from ($p<.05$)

Viewing the data in Table 29, several interesting findings are apparent. First, FOCUS student means were lower than the R.O.M.E. norm group means at the time of pre assessment for the following LEI sub-scales: Diversity, Speed, Friction, Favoritism, Cliqueness, Disorganization, and Apathy. None of these differences however, was statistically significant when compared with t tests for independent means. At the time of post assessment, FOCUS students scored higher than the R.O.M.E. norm group on every dimension of the LEI. Again, however, none of these mean differences was statistically significant.

The most revealing data in Table 29 are derived from a comparison of FOCUS pre and post assessment LEI scores with t tests for correlated means. Statistically significant ($p<.05$) differences in favor of higher post assessment scores were found for the following LEI sub-scales: Friction, Disorganization, Apathy, and Democratic. A significantly lower post assessment score was obtained for the Cliqueness dimension of the LEI. Apparently FOCUS students perceived a greater degree of friction among peers, general school disorganization, academic apathy, classroom democracy, and less social cliqueness during post assessment, than during pre assessment. Differences for the other LEI scales were not large enough to reach statistical significance, though post assessment scores were generally higher than pre assessment scores.

While difficult to interpret these data in terms of the impact of the FOCUS program, it is apparent that student perceptions of school climate/learning environment characteristics were significantly changed over the course of the school year for the scales noted above. These changes are difficult to interpret, and may simply represent beginning and end-of-year secondary student attitude changes brought about by a variety of school-related variables in addition to principal behavior. This seems reasonable since FOCUS students tended to move toward the larger 1974 - 1975 R.O.M.E. norm means for most LEI scales as the school year progressed. When comparing FOCUS student post assessment means to the norm group means, the largest differences were found for the Goal Direction and Satisfaction dimensions of the LEI. This finding is considered important since past R.O.M.E. research has shown that these scales have rather high and positive relationships to teachers' assessments of a variety of principal competencies.

Table 30 summarizes FOCUS and control student post assessment mean, standard deviation, and mean difference scores for dimensions of the _Learning Environment Inventory_. Control group data were derived from 1,003 eighth- and eleventh-grade students in 4 secondary schools in a demographically comparable Georgia school system. Thus, data in the table (30) represent a summary of _post assessment only_ comparisons between FOCUS students and a control sample of students measured at approximately the same time in the late Spring of 1976. Mean scores for dimensions of the LEI for the two groups were tested for statistical significance with t tests for independent means. _None_ of the differences between the two groups, however, reached statistical significance, indicating that students in the two groups had essentially similar perceptions of multiple characteristics of their school environments. It was hoped that FOCUS students would have significantly more positive perceptions than control students, and that tentative conclusions about the impact of the FOCUS program on these perceptions could be derived. Since the t test comparisons demonstrated no significant differences between the two groups, it is questionable that any inferences can be made about the impact of the FOCUS program on secondary student perceptions.

In summary, pre and post assessment, norm group, and control group score comparisons on dimensions of the _Learning Environment Inventory_ did not yield data having general relevance for understanding changes in secondary student

TABLE 30

Summary of Total FOCUS and Control Group Post Assessment Mean, Standard Deviation, and Mean Difference Scores for Dimensions of the Learning Environment Inventory Administered to Secondary Students

Learning Environment Inventory Factors	FOCUS (n=852)		Control[1] (n=1,003)		FOCUS Minus Control
	$\overline{X}$	S.D.	$\overline{X}$	S.D.	Difference
1. Cohesiveness	19.15	1.00	18.88	0.17	0.27
2. Diversity	19.83	0.32	20.09	0.65	-0.26
3. Formality	18.97	0.41	19.17	0.44	-0.20
4. Speed	18.37	0.70	19.18	0.93	0.81
5. Environment	16.47	0.34	16.25	0.92	0.22
6. Friction	20.19	0.57	20.31	0.75	-0.12
7. Goal Direction	17.32	0.35	16.99	0.37	0.33
8. Favoritism	18.52	0.53	19.33	0.87	-0.81
9. Cliqueness	20.86	0.60	21.04	0.97	-0.18
10. Satisfaction	16.13	0.65	15.72	0.59	0.41
11. Disorganization	18.29	0.87	18.27	0.66	0.02
12. Difficulty	18.09	0.20	18.65	0.54	0.44
13. Apathy	18.54	0.87	18.72	0.90	-0.18
14. Democratic	15.89	0.44	15.21	0.79	0.68
15. Competitiveness	19.04	0.35	18.90	0.45	0.14

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[1] Control data derived from R.O.M.E. 1975-1976 field test of the GPAS in 4 secondary schools with 1,003 eighth- and eleventh-grade students.

perceptions coinciding with implementation of the FOCUS training program for principals. The most reasonable explanation for these findings is that students are, in a sense, "one step further removed" from principal behavior than teachers, making the impact of principal performance on student perceptions more difficult to assess. In addition, the main thrust in terms of FOCUS core objectives and program implementation was _curriculum and instruction activities with teachers_. Thus, any pre and post assessment changes in student perceptions can just as easily be attributed to _teacher_, as to _principal_ interactions with students. What seems implied for future external evaluations of the FOCUS program is an examination of principals on an _individual_ basis to compare those working more directly with students, to those who do not. From this design, data would hopefully be forthcoming to demonstrate more positive student perceptions of school environment characteristics for students in schools where principals are participating in activities concerned with accomplishing student-related objectives.

Elementary Student Perceptions of Characteristics of the School Climate/Environment: The My School Inventory

Like secondary students in FOCUS schools, elementary students were pre and post assessed in an attempt to measure changes in their perceptions of characteristics of the school climate/environment coinciding with principals' participation in the FOCUS training program. It was hoped that significant changes toward more positive perceptions would be observed as partial support for the positive impact of the FOCUS program on the school environment.

Elementary students were administered the 45-item, five scale _My School_ inventory (an elementary version of the _Learning Environment Inventory_) in the Fall of 1975 and again during late Spring of 1976. Usable pre and post assessment data were obtained from 1,034 students in grades 3, 4, 5, and 6 in eight schools. These data were examined in terms of pre and post assessment changes (differences) and were contrasted to the 1974 - 1975 R.O.M.E. "norm" and the 1976 control sample of 1,200 elementary students in six schools in a demographically comparable school system. It was hoped these comparisons would indicate that elementary students in FOCUS schools would score significantly higher (have more positive perceptions) than either the R.O.M.E. norm or control samples.

Table 31 presents a summary of pre and post assessment and norm group mean, standard deviation, and mean difference scores for factors of the My School inventory administered to elementary students. An assumed neutral or mid-point score for any scale is 13.5, since each scale contained 9 items which were scored 1--Yes or 2--No. Difference scores were calculated by subtracting the norm group mean from either the FOCUS pre or post assessment mean for each of the five My School factors. Asterisks at the extreme right of the table indicate statistically significant factor mean differences between FOCUS students' pre and post assessment scores. The reader should note that scores for the My School factors are interpreted in a direction opposite that of the scale label because of the scoring procedure applied. That is, a higher Satisfaction mean score indicates student perceptions of relatively less Satisfaction, (i.e., more Dissatisfaction).

Viewing the data in Table 31, several interesting findings concerning elementary student perceptions of characteristics of the school climate/environment emerge. First, during pre assessment FOCUS students perceived their schools' climate as relatively more satisfying, containing less friction, less competitive, less difficult, and less cohesive than the R.O.M.E. 1974 - 1975 norm group. Post assessment/norm group differences, while in the same general direction, were somewhat smaller than the pre assessment differences mentioned

TABLE 31

Summary of Pre and Post Assessment and Normative Group Mean, Standard Deviation, and Mean Difference Scores for Factors of the My School Inventory Administered to Elementary Students

	Pre Assessment			Norm[1]			Post Assessment		
My School Factors	$\bar{X}$	S.D.	Difference[2]	$\bar{X}$	S.D.	Difference[2]	$\bar{X}$	S.D.	
1. Satisfaction	12.55	1.2	-1.69	14.24	2.4	-0.89	13.35	1.3	*
2. Friction	11.47	1.0	1.04	10.43	1.6	0.69	11.12	0.8	*
3. Competitiveness	11.15	0.3	0.25	10.90	1.4	0.53	11.43	0.3	*
4. Difficulty	14.32	0.7	-0.11	14.43	1.8	-0.06	14.37	0.7	
5. Cohesiveness	12.49	0.9	-0.63	13.12	1.5	-0.31	12.81	0.6	*

[1] Normative data derived from R.O.M.E. 1974-1975 GPAS field test with 3,350 elementary students in 35 schools

[2] Difference scores were calculated by subtracting norm mean from either pre or post assessment mean for each sub-scale

*Pre and Post assessment $\bar{X}$ sub-scale scores for FOCUS students significantly different from zero ($p<.05$)

above. Apparently FOCUS elementary students became somewhat more like the norm group of students in their perceptions over the course of the school year. Rather than implying anything about the impact of the FOCUS program on student attitudes, these data may indicate that My School score norms vary with the time of year in which the instrument is administered.

Differences between FOCUS elementary students' pre and post assessment scores on the My School scales were tested for statistical significance with t tests for correlated means. As can be seen in the table (31), statistically significant changes in perceptions towards 4 of the 5 My School scales were evident. FOCUS students perceived their schools as generally less satisfying, containing more friction, less competitive, and less cohesive during post assessment, than during pre assessment. Again, these data may represent the fact that sub-scale scores for the My School instrument vary considerably depending upon the time of year the instrument is administered. Elementary (as well as secondary) students may be less positive towards dimensions and characteristics of their school environments, toward the end, rather than toward the beginning of the school year. Since such a long time period existed between pre and post assessment with the My School instrument, and since, as mentioned above, students are one step further removed from interaction with the principal than with teachers, any inferences about the FOCUS training program for principals and its effects on student perceptions are tenuous at best.

Table 32 summarizes FOCUS and control student post assessment mean, standard deviation, and mean difference scores for dimensions of the My School instrument. Control group data were derived from 1,200 fourth- and sixth-grade students in 6 elementary schools in a demographically comparable Georgia school system. Thus, data in Table 32 represent a summary of post assessment only

TABLE 32

Summary of Total FOCUS and Control Group Post Assessment Mean, Standard Deviation, and Mean Difference Scores for Factors of the My School Inventory Administered to Elementary Students

	FOCUS (n=1,034)		Control[1] (n=1,200)		FOCUS Minus Control	
My School Factors	$\bar{X}$	S.D.	$\bar{X}$	S.D.	Difference	
1. Satisfaction	13.35	1.3	13.73	1.3	-0.38	
2. Friction	11.12	0.8	10.75	0.5	0.37	
3. Competitiveness	11.43	0.3	11.07	0.4	0.36	*
4. Difficulty	14.37	0.7	14.10	0.5	0.27	
5. Cohesiveness	12.81	0.6	13.13	0.5	0.32	

[1] Control data derived from R.O.M.E. 1975-1976 field test of the GPAS in 6 elementary schools with 1,200 students

*Sub-scale means significantly different from zero ($p<.05$)

comparisons between FOCUS elementary students and a control sample of students measured at approximately the same time during the late Spring of 1976. Differences between mean scores for the two groups were tested for statistical significance using t tests for independent means. School means were used as the units of statistical analysis. As can be seen in the table (32), FOCUS elementary students scored significantly higher on the Competitiveness subscale of the My School than students in the control group. Apparently FOCUS students perceived their school environments as characterized by significantly less academic competition than control group students. (It should be remembered here that higher scores on the My School represent less of the perception implied by the sub-scale label). It was hoped that difference scores between the FOCUS and control elementary students would be statistically significant in the direction of the FOCUS group. However, the analyses seemingly indicated that FOCUS elementary student perceptions of characteristics of their school environments were essentially the same as those for the control sample. These data provide little information related to the impact of the FOCUS program on principal behavior and subsequent change to more favorable student perceptions of school environment characteristics.

In summary, it appears that elementary student perceptions in FOCUS schools did significantly change between the times of pre and post assessment, but little can be said about principals' impact on these perceptions. Future external evaluations of the FOCUS program might profit from comparing student responses to instruments such as the My School in schools having principals implementing student-oriented training objectives to either, 1) control schools containing principals undergoing no training, or 2) principals implementing training objectives relevant to other school "publics" (e.g., teachers).

General Conclusions

The general lack of a "true" control group of schools from which pre and post assessment data could be derived for all instruments in the Georgia Principal Assessment System (GPAS) did little to enhance the quality of the external evaluation of the FOCUS participants. As mentioned in the beginning of this chapter, time and budget constraints did not allow for such a pre and post "control" group assessment. Without a true experimental and control group pre and post assessment evaluation design, conclusions relative to the specific impact of the FOCUS program on principal performance and subsequent change in teacher and student school climate assessments can only be tentative. Attempts were made for certain GPAS instruments to compare FOCUS data to the 1974 - 1975 R.O.M.E. "norm", and to a highly similar (control) school system assessed during the Spring of 1976. However, differences evident from these comparisons are only suggestive of the potential impact of the FOCUS program on principal performances in the school environment.

Considering the variety of instruments in the GPAS, the overall objectives of the FOCUS effort at implementing a field-based instructional model for school principals, and the "pilot" nature of this model, several general conclusions based on the external evaluation data seem in order. Each of these is explicated below.

1. There was a general increase in the perception of principals' competencies as being both more frequently and effectively performed at the termination of the FOCUS program, than at its inception. This finding was generally true for principals' own self-assessments, assessments by teachers, and assessments by an external observer. The most encouraging data related to the assessment of principals' competencies were derived from

comparing competency assessments of "project" to "non-project" teachers. These data supported the fact that teachers working directly with the principal on instructional problems as a result of the FOCUS program, rated the principal as both more frequently and effectively performing activities in the Curriculum and Instruction Functional Area of Administrative Responsibility than other teachers. Within the limitations mentioned above, the data lended strong support for an increase in principals' competencies as a result of the FOCUS training program experience.

2. There was apparently some "program overspill" in terms of effects on perceptions of principals' performances in a wide variety of areas. Even though the FOCUS training program was specifically structured around FACTs and performance indicators from the general area of Curriculum and Instruction, pre and post analyses of principals' performances in a variety of other areas, showed significant changes in the direction of higher post assessment scores. Thus, principals increased their competency scores over the course of the FOCUS program in many areas other than the Curriculum and Instruction area. The specific areas of increase varied considerably with the three competency assessment devices (PPDS Form I instruments).

3. Teacher responses to the School Survey instrument showed considerable change between pre and post assessment, in that statistically significant differences were noted for all sub-scales of the instrument in favor of higher (more positive) post assessment scores. FOCUS teachers felt signi-

ficantly more positive towards all aspects of their working environment at the end of the FOCUS program, than at its beginning. In addition, when project teachers were compared to non-project teachers on post assessment scores, project teachers were significantly more positive in their attitudes towards Administrative Practices and Supervisory Relations in the school...School Survey sub-scales having many items referring to teacher/principal relations and interactions.

4. Data derived from the pre and post assessment administration of the LEI and My School inventories was not encouraging in terms of its benefit in evaluating the impact of the FOCUS program. Where significant pre and post assessment differences for dimensions of these instruments did occur, it was noted that these might simply represent a change in norm values for the instruments owing to the time of year in which they were administered. Future analyses of the R.O.M.E. data base during the 1976 - 1977 project year should facilitate understanding these differences more thoroughly.
5. The LEI and My School instruments should not be discontinued as part of the GPAS when applied to field-based programs, in that they have potential for assessing the impact of principal behavior on student perceptions of school climate/learning environment characteristics, specifically in instances where principals are implementing student-related instructional objectives.

In summary, it appears that the application of the Georgia Principal

Assessment System to a pilot field-based training program for public school principals was generally successful. In terms of providing participants and instructors with baseline data from which to build the program, and in providing external evaluation data for assessing program impact on principal behavior and subsequent elements in the school environment, the general findings are considered mostly positive. Stronger support for these statements is evidenced by the mostly positive assessment of the training program and its components by the participants themselves.* Refinement of the GPAS and the FOCUS program during the 1976 - 1977 project year, when combined with a "tighter" external evaluation design, will predictably improve the value of both the FOCUS training model in changing principal behavior, and the sensitivity of the GPAS in detecting these changes.

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*An "internal evaluation" of the FOCUS program by participants was also conducted by VSC R.O.M.E. staff during the course of training. A report of the internal evaluation results is available from Dr. Joseph Licata, Department of Educational Administration, Valdosta State College, Valdosta, Georgia.

Chapter IV

SUPPLEMENTAL RESEARCH ACTIVITIES RELATED TO THE CONTINUED REFINEMENT AND DEVELOPMENT OF THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM

The ultimate goal of the Project R.O.M.E. assessment component at the University of Georgia is to develop a comprehensive set of practically administered instruments and procedures that will measure a set of principal competencies (behaviors) that have been demonstrated through research to be related to a variety of meaningful school criterion variables. During the past two years (1974 to 1976), the Georgia Principal Assessment System (GPAS) has been administered to principals, teachers, and students in approximately 70 elementary and secondary schools in the State of Georgia. This effort has allowed for the accumulation of approximately 2.3 million bits of information, all of which has relevance for accomplishing the long-range assessment goal described above.

As in any research and development project centering on the creation of a comprehensive assessment system, many supplemental research activities related to instrument refinement and development must be undertaken if the project is to generate usable, and psychometrically sound products. In addition to these instrument development activities, a broader understanding of global and "specific" relationships existing among important variables comprising the data base depends upon supplemental analyses of the data. The importance of this latter activity lies both in accomplishing main project R.O.M.E. goals, and in investigating relationships between school-related variables having broad meaning within the context of education.

This chapter of the report summarizes R.O.M.E. assessment component research activities and results for the 1975 - 1976 project year that were supplemental to the accomplishment of major project goals specifically described in Chapters II and III. The chapter is written for the reader with more "technically-minded" interests. It is suggested that those unfamiliar with traditional instrument development procedures, psychometric characteristics of measuring devices, and multivariate statistical analyses might best profit from reading summary statements and general conclusions at the end of each section that follows.

Instrument Development and Refinement

During the 1975 - 1976 project year, R.O.M.E. assessment staff conducted statistical analyses of the existing GPAS data based (derived from 45 schools in the State of Georgia in the Spring of 1975) to examine both structural and psychometric properties of several GPAS instruments. Some of these analyses were accomplished by R.O.M.E. research assistants as part of their completion of thesis and dissertation requirements at the University of Georgia, and credit will be given to these persons where appropriate. Other analyses were completed to examine relationships between FACT competencies and school mediating and outcome variables to establish their potential for the future selection of items for a final form of the various Principal Performance Description Survey instruments. In addition, factor analyses were undertaken for two of the larger mediating variable measures within the assessment system to examine their empirical structure, with an eye towards eventually reducing their number of sub-scales and items. Each of these analyses is described in more detail in the separate sections concerned with instrument reliability, validity, and structure that follow.

RELIABILITY

Internal Consistency of the My School Inventory

The My School inventory is administered to all elementary students participating in field testing the GPAS as a measure of their perceptions of five characeristics of the school climate: Satisfaction, Friction, Competitiveness, Difficulty, and Cohesiveness. The My School inventory was adapted from the My Class inventory originally developed by Walberg and Anderson (1973), by simply rewording items to incorporate the concept of "school" rather than "class" or "classes." This change was considered necessary in order to elicit a more generalized response from students about school characteristics, and to better take into account situations where individual students have different classes with different teachers during the regular school day. One of the concerns of R.O.M.E. assessment staff in making these item changes, was the effect of such procedures on the internal consistency reliability of the instrument.

The original My Class inventory reliability estimates according to Anderson (1973) are as follows: Satisfaction (.77), Friction (.70), Competitiveness (.56), Difficulty (.56), Cohesiveness (.54). In order to alleviate the concerns stated above, internal-consistency reliability coefficients (Cronbach's Alpha) were computed on a sample of 3,703 fourth-grade students in 42 elementary schools in the R.O.M.E. data base (Perkins, 1976). Table 33 presents grouped frequency distributions of Cronbach's coefficient alpha estimate of internal-consistency reliability for the total sample (n=42 schools) on the five dimensions of the My School instrument. The reliability estimates for the 42 schools ranged from .05 to .85 across the five dimensions of the My School instrument, with median reliability coefficients for Satisfaction, Friction, Competitiveness, Difficulty, and Cohesiveness of .73, .57, .41, .52, and .46, respectively.

This analysis indicated that the reliability estimates for sub-scales of the My School are not extremely different from those originally reported for the My Class inventory. In general, the coefficients are relatively moderate

TABLE 33

Grouped Frequency Distributions of Cronbach's Alpha Coefficient Estimate of Internal Consistency Reliability for Total School Sample (n=42) on Dimensions of the *My School* Inventory

Intervals for Alpha Reliability Index	Satis-faction	Friction	Competi-tiveness[1]	Difficulty	Cohesive-ness
.96-1.00					
.91-.95					
.86-.90					
.81-.85	1	1			
.76-.80	10	2			
.66-.70	9	9	2	3	1
.61-.65	3	3	1	5	4
.56-.60		4	2	7	4
.51-.55	1	5	4	6	2
.46-.50		7	5	4	6
.41-.45	2	3	6	4	9
.36-.40		2	5	6	5
.31-.35	1		4	3	1
.26-.30			2	1	
.21-.25			2	1	1
.16-.20			4		1
.11-.20			4		1
.06-.10		1			
.00-.05			1		
Median	.73	.57	.41	.52	.46

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[1] There was a negative reliability estimate on this scale of -.05 that was not recorded in the distribution.

in magnitude, which may be attributed to 1) the rather small number of items on each sub-scale, 2) the small sample size in some schools, 3) difficulties associated with measuring the perceptions of young children, or 4) some combination of these factors. The coefficients are, however, considered of strong enough magnitude to support the continued use of the instrument for purposes of Project R.O.M.E. Additional reliability computations seem in order as the school sample size increase during the coming project year. The addition of new schools to the elementary sample can have the effect of increasing the internal reliability estimates for the My School Inventory, though this is not too probable.

Internal Consistency of the School Survey

The School Survey instrument is administered to all elementary and secondary teachers participating in field testing the GPAS as a measure of their attitudes towards their work setting and environment along the following dimensions: Administrative Practices, Professional Work Load, Non-Professional Work Load, Materials and Equipment, Buildings and Facilities, Educational Effectiveness, Evaluation of Students, Special Services, School-Community Relations, Supervisory Relations, Colleague Relations, Voice in Educational Programs, Performance and Development, and Financial Incentives. The School Survey was developed by Coughlan and Cooke (1974), who report that Kuder-Richardson Formula 20 internal-consistency reliability coefficients for the 13 factor form of the instrument ranged from .44 to .80, with a median scale reliability of .67.

Since the form of the School Survey used in Project R.O.M.E. to date has been the revised 14 factor instrument, the need for examining the internal-consistency of the instruments' sub-scales seemed evident. In order to establish these reliability estimates for the R.O.M.E. sample schools, internal-consistency reliability coefficients (Cronbach's Alpha) were computed for a sample of 958 teachers in 42 elementary schools (Perkins, 1976).

Table 34 presents grouped frequency distributions of Cronbach's coefficient alpha estimate of internal-consistency reliability for the total sample (n=42 schools) for each of the 14 dimensions of the School Survey. Acronyms for the School Survey scales can be cross-referenced with the scale names listed above. The reliability estimates for the 14 sub-scales ranged from .05 to .95 across the sample of 42 elementary schools. The median reliability for each of the 14 scales ranged from a low of .58 for School-Community Relations to a high of .85 for Supervisory Relations. The relatively low reliability for some sub-scales may have been due to the small number of scale items or the small number of respondents in a particular school. One school, for example, had 8 teachers responding to the instrument out of an original total of only 10 teachers.

This analysis indicated that the reliabilities of the separate sub-scales of the School Survey instrument are generally of a magnitude to make the instrument continually useful in accomplishing R.O.M.E. competency validation efforts. It may be that reliabilities for the sub-scales will increase when these are again computed for the different sub-scales emerging from a large sample factor analysis of the instruments' items (see Structure section below). In addition, it appears that a reexamination of a larger sample of schools in the future may be in order, though this procedure most probably would not appreciably increase the size of the internal-consistency coefficients reported here.

Internal Consistency of the Principal Performance Description Survey - Teacher Form I Instrument

The Principal Performance Description Survey (PPDS) - Teacher Form I instrument was administered to teachers participating in field testing the GPAS during

TABLE 34

Grouped Frequency Distribution of Cronbach's Alpha Coefficient Estimate of Internal Consistency Reliability for Total School Sample (n=42) on *School Survey* Factors[1]

Interval for Alpha Reliability Index	ADP	PWL	NPW[2]	MAE	BAF	EDF	EOS	SPS	SCR	SVR	COR	VEP	PAD	FIN
.91-.95	1									5				
.86-.90	8			1	1	1				9	2		3	3
.81-.85	14	1		13		4	2	4		8	7	2	10	13
.76-.80	7	2	3	8	2	3	11	9	1	3	5	7	10	6
.71-.75	4	6	3	8	8	10	7	4	5	4	6	5	8	6
.66-.70	2	7	7	5	9	4	3	11			7	11	3	4
.61-.65	1	5	5		4	1	9	4	8		4	7		2
.56-.60	2	1	3	2	4	6	1	5	7		1	4	1	2
.51-.55	1	5	8	2	4	2	2		8	1				
.46-.50	1	3	2		1		3	1	3	1	2	4		1
.41-.45		2	3	1	1	1			1			1		
.36-.40		1	1		3	1	2		1		1		1	
.31-.35			2		3				1					
.26-.30		2												1
.21-.25									1				1	
.16-.20				1	1									
.11-.15														
.06-.10			1											
.00-.05														
Median	.81	.64	.59	.76	.65	.61	.70	.70	.58	.85	.73	.68	.78	.78

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[1] Number of schools for which reliability estimates were computable ranged from 31 to 41 across the 14 dimensions.

[2] There were 2 negative reliability estimates with values of -.05 and -.27 on this scale which were not included in the distribution.

the Spring and Fall of 1975 to assess teachers' ratings of the frequency and effectiveness with which their principals performed 117 different behaviors in the school. The PPDS - Teacher Form instrument is thus, one instrument within the total GPAS that serves as "input" concerning principals' functioning. Since the instrument was originated within Project R.O.M.E., reliability estimates for its sub-scales are mandatory to begin understanding its formal psychometric properties.

It will be recalled that two item classifications (Functional Areas of Administrative Responsibility and Administrative Operations) were used in developing sub-scales for the various PPDS instruments. In addition, two rating scales (frequency of performance and effectiveness of performance) were used by teachers when responding to items on the instrument. Therefore, reliability estimates had to be obtained for each of the sub-scales and for each of the rating dimensions. Using a sample of 42 elementary schools within the R.O.M.E. data base, Pool (1976) computed internal-consistency reliability coefficients (Cronbach's Alpha) for each of the PPDS - Teacher Form I instrument sub-scales, for each rating dimension. Table 35 summarizes the number of schools distributed within internal-consistency reliability coefficient ranges for each of the Administrative Operations sub-scales of the Teacher - PPDS. Table 36 summarizes the number of schools distributed within internal-consistency reliability ranges for each of the Functional Areas of Administrative Responsibility sub-scales of the Teacher - PPDS. It might be noted (Tables 35 and 36) that a total of 42 schools is not represented for some sub-scales of the Teacher - PPDS. In addition, the Evaluating, Decision-Making, and School-Community Interface sub-scales are not represented. These findings are attributed to either a paucity of items for a particular sub-scale (e.g., School-Community Interface) or an extremely small number of respondents in a particular school who tended to re-

TABLE 35

Summary of Number of Schools Distributed Within Reliability Coefficient Ranges (Cronbach's Alpha) for PPDS - Teacher Form Composites
(Frequency and Effectiveness Ratings)
By Administrative Operations
(n=42 Elementary Schools)

	PPDS - Teacher Form Composites							
	Data Collection (13)[1]		Planning (7)		Communicating (74)		Implementing (21)	
Alpha Range	F[2]	E	F	E	F	E	F	E
.96 - 1.00	3	4			39	40	9	4
.91 - .95	24	19	5	5	3	1	15	17
.86 - .90	8	12	10	9			10	7
.81 - .85	4	4	14	13			1	7
.76 - .80	1		8	4			1	1
.71 - .75	1	1	1	6			1	1
.66 - .70	1	1	2	1			1	
.61 - .65		1		1				
.56 - .60				2				
.51 - .55								
.46 - .50			1					
.41 - .45								
.36 - .40			1					
.31 - .35								
.26 - .30				1				
.20 - .25								
Total	42	42	42	42	42	41	38	37

[1] Number of items in composite

[2] F = Frequency Rating; E = Effectiveness Rating

TABLE 36

Summary of Number of Schools Distributed Within Reliability Coefficient Ranges (Cronbach's Alpha) for PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) By Functional Areas of Administrative Responsibility (n=42 Elementary Schools)

	PPDS - Teacher Form Composites									
	Curriculum/ Instruction (35)[1]		Staff Personnel (40)		Pupil Personnel (17)		Fiscal Management (9)		System-wide Policies and Operations (15)	
Alpha Range	F[2]	E	F	E	F	E	F	E	F	E
.96 - 1.00	31	31	27	24	9	6	1	1	4	4
.91 - .95	9	8	12	16	16	22	15	13	24	21
.86 - .90	2	2	3		10	5	15	14	8	8
.81 - .85					1	3	4	8	4	6
.76 - .80					2	2	5	5	1	1
.71 - .75										1
.66 - .70							1		1	1
.61 - .65							1	1		
Total	42	41	42	40	38	38	42	42	42	42

[1] Number of items in composite

[2] F = Frequency Rating; E = Effectiveness Rating

spond in a highly similar manner, thus reducing variability between subjects. The reliability estimates for the 11 dimensions ranged from a low of .45 to a high of .99 for *frequency* ratings, and from .30 to .99 for *effectiveness* ratings across the total sample of 42 schools (Tables 35 and 36).

Table 37 summarizes ranges and median values for the internal-consistency coefficients *within* schools for each sub-scale of the PPDS - Teacher Form I instrument for both *frequency and effectiveness* ratings. The median reliability for each of the possible 11 dimensions of the instrument ranged from a low of .84 (Planning) to .98 (Communicating) for the *effectiveness* ratings. These findings lend strong support to the rather high internal-consistency of the PPDS - Teacher Form I instrument. One explanation of the rather high coefficients lies within the structure and development of the instrument itself. Items were originally classified within sub-scales of the instrument on the basis of content through the consensual agreement of five R.O.M.E. assessment personnel. This process probably facilitated generally high content validity for the separate sub-scales. In addition, all items on the instrument are stated in a positive direction, since they represent statements of principal performance (e.g., *Works with teachers in designing classroom environments to facilitate learning*), which most likely generates somewhat higher coefficients than the inclusion of negatively stated items. Overall, the reliability estimates for the separate sub-scales of the instrument are very encouraging, and well indicate that teachers are consistent as individuals when responding to various items comprising the separate sub-scales, for both *frequency* and *effectiveness* of performance ratings.

Conclusions

Reliability estimates for the *My School* and *School Survey* instruments computed on a sample of 42 elementary schools during the 1975 - 1976 project year

TABLE 37

Summary of Ranges and Medians of Internal Consistency (Alpha) Coefficients Within Schools for Composites of the PPDS - Teacher Form for Frequency and Effectiveness Ratings (n=42 Elementary Schools)

	Frequency Rating		Effectiveness Rating	
Administrative Operations	Range	Median	Range	Median
Data Collection (13)[1]	.70 - .98	.92	.67 - .97	.91
Planning (7)	.45 - .93	.84	.30 - .95	.83
Communicating (74)	.94 - .99	.98	.95 - .99	.98
Implementing (21)	.70 - .97	.93	.75 - .98	.92
Evaluating (2)	* *	*	* *	*
Functional Areas of Responsibility				
Curriculum and Instruction (35)	.89 - .99	.97	.86 - .99	.97
Staff Personnel (40)	.89 - .99	.96	.91 - .99	.96
Pupil Personnel (17)	.78 - .98	.93	.79 - .98	.93
School Community Interface (1)	* *	*	* *	*
Fiscal Management (9)	.63 - .96	.90	.65 - .95	.88
System-Wide Policies and Operations (15)	.70 - .97	.92	.67 - .97	.91

[1] Number of items in composite

*Alpha not computed due to small number of items in composite are considered "acceptable" in terms of the purpose for which the instruments are being used within the general GPAS validation design. Ideally, higher coefficients are desirable for each of the instruments. However, since the instruments are being used as *mediating* criterion variables within the principal competency validation design, the range in internal-consistency reliability estimates for the instruments' various sub-scales is of sufficient magnitude to continue their use in further project research.

During the coming project year, an effort will be made to compute internal-consistency reliability coefficients for the *Learning Environment Inventory* administered to secondary students. This could not be done efficiently using the 1974 - 1975 R.O.M.E. data base since the number of secondary schools was rather small. With the addition of secondary schools during the coming project year, the sample will most likely be large enough to have faith in the coefficients once they are established. In addition, stability coefficients (test - retest reliabilities) for the *My School*, *Learning Environment Inventory*, and *School Survey* instruments should probably be established in order to compare these to older reported coefficients for the instruments. This is a feasible activity *provided that time and budget considerations can be met*, and cooperation from schools participating in field testing can be obtained during the coming year.

Reliability estimates for the PPDS - Teacher Form I instrument were generally high, and most encouraging. Other PPDS instruments within the GPAS (PPDS - Principal Form, Student, and External Observer Forms) should have their reliabilities computed during the coming year if possible. Most critical of these investigations, is the computation of "inter-observer" reliabilities for the External Observer instrument. If this instrument becomes an integral part of a final form of the GPAS, assurance is needed that the instrument can be administered to a principal by a variety of individuals who can arrive at approximately the same score. All of these research tasks are supplemental to the main goals of the R.O.M.E. assessment component for the coming year. However, if one is to have professional faith in the quality of the instruments developed within the project, these activities most certainly should be undertaken time and budget allowing.

VALIDITY

The most crucial area of research in Project R.O.M.E. is concerned with establishing validity coefficients...particularly of a predictive nature...for the various competency assessment instruments. The main goal of the project in developing a comprehensive assessment system for the behavior of school principals, continues to be the validation of performance assessments by a variety of input sources against meaningful school mediating and outcome criterion variables. This process is central to the project because the magnitude and direction of predictive validity coefficients will be used as the main evidence for the selection of items for the final form of competency (principal performance) assessment instrumentation. Items need to be selected on the basis of their known relationships to both mediating and outcome variables within the GPAS validation design if the instruments are to be considered psychometrically sound. The sections that follow describe past and continuing efforts to validate assessments of principal performances against meaningful school criteria.

Item Validation

Individual items comprising the various forms of the Principal Performance Description Survey Form I instruments for principals, teachers, students, and an external observer were correlated with all mediating and all outcome variables within the GPAS design during the 1974 - 1975 project year. These item statistics were summarized in the 1974 - 1975 R.O.M.E. Final Report and will not be reiterated here. In general, the item statistics indicated that the percentage of significant correlations between various PPDS Form instrument items and mediating and outcome variables varied considerably depending upon 1) the particular combinations of variables on which the correlations were computed, 2) whether elementary, secondary, or total school samples were used for the analyses, and 3) the particular rating scale (either frequency or effectiveness of performance) used as a predictor. Those interested in summaries of the frequency of significant correlations between PPDS Form items and any combination of mediating and outcome variables are referred to the 1974 - 1975 Final Report. These are far too numerous to include in this document.

In addition to summaries of the frequency of significant item correlations existing in the R.O.M.E. data base, the specific PPDS Instrument Item/ Mediating and Outcome Variable correlations have been tabulated for all variable combinations for the first set of 338 "verified" principal performance statements. Tabling this large number of specific item/factor intercorrelations for purposes of this report was prohibitive as to time and space. However, they will most probably comprise an Appendix in the 1976 - 1977 R.O.M.E. report.

In general, item predictive validity coefficients for the various PPDS Forms are encouraging in terms of what they imply for selecting items for a final form of the competency (performance) assessment instruments. These coefficients represent one form of predictive validity information for both item selection and the development of instrument sub-scales. Item statistics will also be computed for a new (second) set of 273 principal performance statements during the 1976 - 1977 project year.

Sub-scale (Composite) Validation

A second part of the R.O.M.E. assessment component effort to establish the predictive validity of competencies (performances) of public school principals, has centered on establishing correlational relationships between PPDS Instrument sub-scales (composites) and all mediating and outcome variables within the GPAS design. Owing to the history of the development of the R.O.M.E. competency classification and assessment systems, individual PPDS items are aggregated by both Functional Areas of Administrative Responsibility (Curriculum and Instruction, Staff Personnel, Pupil Personnel, Support Management, School-Community Interface, Fiscal Management, System-Wide Policies and Operations) and Administrative Operations (Data Collection, Planning, Communicating, Decision-Making, Implementing, Evaluating) composites.

During the 1974 - 1975 project year, intercorrelations were computed between all PPDS instrument composites and all possible combinations of GPAS mediating and outcome variables. These intercorrelation tables are reported in the 1974 - 1975 project report and will not be reiterated here. Suffice it to say that the process of aggregating the first 338 principal performance statements into composites and correlating these with GPAS criterion variables was most encouraging in terms of what the correlations imply for future item selection and instrument development. A large percentage of PPDS composite/criterion variable correlations were significant, supporting the item aggregations' predictive validity.

As the project continues into the 1976 - 1977 year, PPDS instrument composite/criterion variable correlations will again be computed for a new (second) set of 273 principal performance statements. These data, when combined with that resulting from the 1974 - 1975 analyses, should produce a set of sub-scales for a final form of the various PPDS instruments...a set known to predict meaningful school criteria...that can be used to develop a competency assessment profile for individual school principals. Thus, instrument refinement will probably best proceed by using the composite/criterion variable correlations to be used in final item selection. Resulting from this process should be a set of PPDS instrument sub-scales (composites) comprised of only those items showing predictive validity to mediating and outcome variables within the GPAS.

Functional Area Category Title (FACT) Validation

Project R.O.M.E. FACT statements were excerpted from a high-priority list of 80 statements of principal performance (competencies) surviving a first statewide verification survey as described in Chapter I of this report. A list of the 80 FACT statements classified by Functional Areas of Administrative Responsibility can be found in Appendix J. For these 80 FACT statements, 885 performance indicators were developed and subjected to a second statewide survey for professional verification by 290 public school principals. Items selected for the first forms of the Principal Performance Description Survey instruments were 338 high-priority principal performance indicator statements surviving this second verification survey. Since each of these 338 items was originally classified by FACT statement, FACT scores can be computed within the GPAS validation design and statistically related to both mediating and outcome measures.

Because the FACT statements were fewer in number and more "generic" in nature than the 338 performance indicators, a project objective during the 1975 - 1976 year was to correlate FACT scores for the various PPDS instruments with available criterion measures. This FACT validation analysis produced a surprisingly large number of statistically significant coefficients, demonstrating the general predictive validity of the more generic FACT "competencies." Tables summarizing these correlational analyses for each of the PPDS Form I instruments can be found in Appendix J. The specific FACT numbers in any of the tables can be cross-referenced with the FACT index preceding the tables in Appendix J. The tables show the intercorrelations between the PPDS instruments (Principal, Teacher, and External Observer Forms) and GPAS mediating and outcome criterion variables for elementary and total samples only. Secondary school analyses were not computed owing to the small number of schools in the R.O.M.E. sample. These FACT analyses can be more meaningfully completed during the coming project year as the secondary school sample becomes of sufficient size.

A detailed description and interpretation of the FACT coefficients presented in Tables A through O is beyond the general scope of this report and will not be provided here. However, several general statements can be made about the validity data and the utility of the FACT statements within the GPAS.

1) The most predictable mediating variable criterion seems to remain the School Survey instrument, a finding consistent with "composite" validation studies conducted during 1974 - 1975.
2) Relationships between the various PPDS instruments and student perceptions of dimensions of the school climate (My School factors) were probably the most infrequently occurring.
3) The frequency of correlations between principals' own self-assessments of FACT competencies (PPDS - Principal Form) and criterion variables was greater than predicted.
4) The correlations offer strong support for eventually identifying and rank ordering the FACT statements in terms of their global relationships to both school mediating and outcome variables.
5) The FACT structure originally developed in R.O.M.E. can feasibly be used to develop a competency assessment system for school principals capable of yielding FACT scores for each of the various PPDS

instruments, or for some combination of these.

Thus, the process of validating FACT scores against mediating and outcome criterion variables within the GPAS model has generally yielded encouraging results in terms of the long-range objectives of the project. It is expected that the same analyses for a secondary school sample during the coming year will probably allow project personnel to begin delineating subsets of FACT competencies appropriate for secondary, as opposed to elementary, school principals. In addition, FACT analyses of the second set of principal performance indicator statements (273 new items) comprising the PPDS Form II instruments during the coming year, will enhance the selection of principal performance FACT indicators for a final form of the PPDS instruments...a form containing FACTs and subsumed indicators demonstrating the best predictive validity.

Conclusions

Validation analyses for ratings of a wide variety of principal performance indicator statements, competency "composites", and FACT "competencies" have yielded data demonstrating the predictive validity of GPAS input variables, as well as the "predictability" of GPAS mediating and outcome variables from these assessments. To date, some 350 to 400 thousand correlations related to the predictive validity of principal performance assessments and classifications of these have been generated within the R.O.M.E. assessment effort. This large amount of data will have to be "sifted" through during the coming project year to select items for a final form of "competency" assessment instruments. This will be an enormously time-consuming task. However, a final form of the PPDS instruments will contain only those items (statements of principal behavior) demonstrated through research to be related to meaningful school criterion variables. This fact alone will enhance, to no small degree, the amount of faith that can be placed in the instruments by both professionals and practitioners in school administration. When combined with demonstrated reliability characteristics described above, the final form of the Principal Performance Description Survey should be the most psychometrically sound set of instruments yet developed to assess a wide variety of principal behaviors (competencies).

STRUCTURE

During the 1975 - 1976 project year, the decision was made to examine the dimensional structure of two of the GPAS mediating variable measures, the Learning Environment Inventory and the School Survey, with an eye toward the possibility of reducing the total number of scales and items on these instruments. In keeping with the original assessment goal of developing instrumentation that can be "practically administered", the overall length of these two instruments is a prime concern. The form of the School Survey currently administered to all teachers participating in field testing the GPAS, for example, has 14 dimensions (factors) and 118 items. The Learning Environment Inventory contains 105 items distributed across 15 different sub-scales (factors). Besides the practical consideration of instrument length, a review of the manner in which these two instruments were developed and a close examination of item content, made their structure somewhat suspect.

One traditional way to statistically examine instrument "structure" is through factor analysis techniques. Of the vast myriad of factor analysis techniques available, principal components analysis with varimax rotation solution for simple structure is probably the most useful and meaningful to the instrument developer (Nunnally, 1975). This technique is probably most beneficial when either originally developing an instrument, or when examining whether an instrument's "empirical" structure matches its logical, theoretical, or assumed structure. Considering the variety of instruments comprising the GPAS and the nature of the R.O.M.E. data base, mediating variable measures (the LEI, My School and the School Survey) are most amenable to factor analysis procedures.

The sections that follow briefly summarize factor analyses completed on the Learning Environment Inventory and the School Survey within Project R.O.M.E. during the 1975 - 1976 project year. A detailed description of all results of the factor analyses is not provided. However, the essential information related to the emergent structure of these two instruments is delineated for the interested reader. Tables relevant to the results discussed below can be found in Appendix K.

Factor Analysis of the Learning Environment Inventory

Using data derived from 4,465 secondary students, the 105 items of the Learning Environment Inventory (LEI) were subjected to a principal components factor analysis and varimax rotation solution following procedures as outlined by Dixon (1973). Squared multiple correlation coefficients were used as initial estimates of communality. Before the analysis all items were coded in a manner consistent with the original 15 LEI scale names so that a maximum score of 4 (Strongly Agree) for any item was associated with an increase in positive perception of the dimension represented by a sub-scale name.

Consistent with the predicted results, the factor analysis with orthogonal rotation yielded only six salient factors for the instrument (minimum eigen value = 1.00) accounting for approximately 24% of the total test variance. Of the 105 LEI items, only 18 failed to load .30 or greater on one of the six factors. Table A in Appendix K presents the number of significantly loaded items associated with the original LEI scales and their placement relative to the six factors resulting from the analysis. In addition to the 18 items failing to load on any factor, the decision was made to eliminate items loading on more than one factor (n=12) if the difference between their respective loadings was less than .10. Items loading in a bipolar manner were retained and placed on the factors relative to their highest loading. With the application of these additional placement criteria, only 81 of the original 105 items remained for the six salient factors.

Results of the factor analysis generally indicated that little item homogeneity for the original LEI scales was found, with respect to their loadings across the six interpretable factors derived from the analysis. While some clustering of items from the original scales was noticed, there was a tendency for items comprising a particular scale to be dispersed across more than one factor.

Table B in Appendix K presents a summary of the significantly weighted LEI items for each of the six factors resulting from the analysis, as well as the direction and magnitude of their respective loadings. In addition, the original LEI scale name with which the items are associated is included, as well as loadings and factor numbers for items loading on more than one factor. The classification represented in the table is based on the selection and placement criteria described above.

Several tentative conclusions seem warranted on the basis of the principal components analysis of the LEI. It appears that the separate sub-scales originally derived from a theory-based, rational sorting procedure to insure homogeneity of item content, are not independent in their structure, and that the process of empirically factor analyzing students' responses to the items does not yield a factor structure matching the instruments' original scale names. As regards specific items, data from the factor analysis indicate that fully 23% (n=24) of the original 105 LEI items show either no meaningful relationship to the factors empirically derived from the analysis, or are loaded on more than one factor. Thus, it appears that the LEI's empirical structure is not comprised of 15 separate factors, and may measure only 6 global characteristics of students' perceptions of the secondary school climate/learning environment.

Factor Analysis of the School Survey

Using data derived from 957 elementary and secondary teachers, the 118 items of the School Survey were subjected to a principal components factor analysis and varimax rotation following procedures as outlined by Dixon (1973). Values of 1.00 were entered as communality estimates. Before the analysis all items were coded in a manner consistent with the original 14 School Survey scale names so that a maximum score of 3 (Agree) for any item was associated with an increase in positive perception of the dimension represented by a sub-scale name.

Consistent with the predicted results, the factor analysis with orthogonal rotation yielded only eight salient factors for the instrument (minimum eigen value = 1.00) accounting for approximately 46% of the total test variance. Besides eliminating items failing to load .40 or greater on any one factor, the decision was made to eliminate items loading on more than one factor, if the difference between their respective loadings was less than .10. In keeping with the assumptions of orthogonality, items loading in a bipolar manner were retained and placed on factors relative to their highest loading. With the application of these selection and placement criteria, only 71 on the 118 original items remained for the eight factors.

Table C in Appendix K presents a summary of the significantly weighted School Survey items for each of the eight factors resulting from the analysis as well as the direction and magnitude of their respective loadings. In addition, the original School Survey scale name with which the items are associated is included, as well as loadings and factor numbers for items loading on more than one factor. Eigen values for each factor are also provided. The classification represented in the table is based on the selection and placement criterial described above.

Several tentative conclusions seem warranted based on this first principal components analysis of the School Survey. It appears that the separate sub-scales as originally designated by Coughlan and Cooke (1974) and their research, are not independent in their structure. In addition, many of the individual items are not independent in terms of their alignment with clearly interpretable factors. As regards specific items, data from the factor analysis reported here indicate that fully 47% (n=56) of the original 118 School Survey items show either no meaningful relationships to any of the eight factors derived, or are loaded on more than one factor. Thus, it appears that the structure of the School Survey resulting from the R.O.M.E. factor analysis does not match the original structure proposed by the instrument developers. The instrument may more simply measure 8 global characteristics of teacher perceptions of their working environment.

Conclusions

The factor analytic studies of the Learning Environment Inventory and the School Survey instruments completed in Project R.O.M.E. during 1975 - 1976 indicate that item and scale revision for the two instruments is probably needed, in addition to a "renaming" of the factors (perceptions) the two instruments purportedly measure. However, a reduction in the scales and items of these instruments will most probably not be made when field testing the assessment system during the 1976 - 1977 project year. In order to conduct predictive validity studies that are consistent with the data base already existing in the project, the original instruments will be administered to students and teachers in their entirety. Underlying the rationale for including the original forms of the instruments in further field testing, is the loss of item information that would accrue if the instruments were shortened in length. Admittedly, the instruments are lengthy, (though still practical to administer in their full form), however, loss of information within the R.O.M.E. data base is not seen as desirable at this point.

Eventual changes in the instruments' structure might well be included in a final form of the Georgia Principal Assessment System as a "short" form, consisting of fewer scales with more internally-consistent items. In addition, the longer, original forms of the instruments could remain part of the assessment system so that individual schools and/or systems could utilize information derived from all items. If this is done, interpretations of data yielded by the instruments should probably not be aggregated by the original scales... and interpretations of findings using these scales should remain somewhat tenuous.

Supplemental Research Activities

As with any large research and development project, supplemental research activities can often yield results having implications for accomplishing project goals, as well as implications for better understanding the complex relationships between a large number of variables that exist in the educational context. This section of Chapter IV reports the results of multivariate statistical analyses of relationships between selected input, mediating, and outcome variables within the GPAS, supplemental to the main assessment goals of competency validation and instrument development. It is suggested that the reader generally unfamiliar with multivariate statistical analysis procedures might best profit from reading the general conclusions summary at the end of each section that follows. No attempt will be made here to detail all of the intricacies involved in the statistical methodologies used in this research, and the interested reader is referred to other sources (e.g., Cooley and Lohnes, 1971; Meredith, 1968; Bock, 1975). The results summaries are derived from a Masters' degree thesis (Pool, 1976) and a Doctoral dissertation (Perkins, 1976) completed at the University of Georgia utilizing a R.O.M.E. assessment sample of 42 elementary schools in the State of Georgia.

During the 1975 - 1976 project year, two multivariate statistical investigations were undertaken by Project R.O.M.E. assessment to examine 1) relationships between elementary student and teacher perceptions of characteristics of the school learning climate and work environment and student achievement and average daily attendance, and 2) relationships between elementary teachers' assessments of principals' competencies (performances) in a wide variety of areas and their (teachers') attitudes towards multiple dimensions of their working environment. The specific multivariate technique selected for these two studies was canonical correlational analysis. In general, the canonical correlation technique serves to identify and better understand the statistical relationships between multiple independent (predictor) variables and multiple dependent (criterion) variables, by establishing the maximum correlation between the best linear functions (combinations) of the two variable sets. Once the maximum correlation between the variable sets is established, the interpretation of the contribution of variables comprising the sets to the canonical correlation essentially depends upon the practical considerations of the given researcher. Whatever method is used, however, an attempt is made to look at dimensions of individual variables within the independent and dependent variable sets, in terms of their relative contributions to the "maximum correlation" between the two sets. This allows for an understanding of the relative contribution of each variable in a "set" (either independent or dependent) to the maximum correlation between the sets. In addition to the "maximum correlation" between the variable sets, second, third, fourth, etc. order relationships may be forthcoming from the canonical analysis.

Multivariate Relationships Between Teacher and Student Perceptions of School Environment Characteristics and Student Achievement and ADA

Using a sample of 42 elementary schools from the R.O.M.E. data base, Perkins (1976) examined the multivariate relationships between fourth-grade student achievement as measured by the Iowa Tests of Basic Skills (ITBS) subtests and average daily attendance (ADA), and teachers' perceptions of dimensions of their working environment (the School Survey) and students' perceptions of characteristics of the school climate (the My School). The general statistical technique utilized was canonical correlational analysis. In addition, a partial canonical correlation was computed between student perceptions of school climate characeristics and school outcome variables (student achievement and ADA) by first removing common variance between these two variable sets contributed by teacher perceptions of characteristics of their working environment (the School Survey). Thus, an examination was made of the canonical relationship existing between student perceptions of school climate characteristics and school outcomes with the effects of teacher perceptions removed from these variables. A brief description of results derived from these canonical analysis procedures that serves to highlight the relationships between the variable sets follows. A much more detailed description of specific procedures used in the analyses and the implications of the findings can be found in Perkins (1976).

The results of the canonical correlation analysis between the My School factors and student outcome measures, and between the School Survey factors and student outcome measures is presented in Table 38. The data in the table indicate that one significant canonical correlation (.90) was established be-

TABLE 38

Results of the Canonical Analysis of the _My School_ and the _School Survey_ Factors and Student Outcome Measures

Latent Root	Canonical Correlation	Wilks' Lambda	Chi Square	Degrees of Freedom
MY SCHOOL				
1	.90	.100	82.58*	30
SCHOOL SURVEY				
1	.91	.011	141.24*	84
2	.81	.067	85.03*	65

*p<.05

tween the My School factors and the student outcome variables of student achievement and ADA, and two significant canonical correlations (.91 and .81) were established between the School Survey factors and the student outcome variables (student achievement and ADA). Thus, the correlations between the linear functions of the My School and the School Survey as independent variable sets, and student achievement and ADA as a dependent variable set, were most encouraging. These findings demonstrate the global strength of relationship between student and teacher perceptions of characteristics of the school climate and working environment and meaningful school outcome measures.

Specific canonical correlations take on meaning only in terms of their associated standardized weights and or product-moment vector/scale correlations. For the Perkins (1976) study, the procedure suggested by Bock (1975) of correlating the original variables of one canonical variate with the canonical variate score (composite) of the opposite variate was utilized to interpret the significant canonical relationships established above. Table 39 summarizes the product-moment correlations between the original My School dimension scores and the student outcome variate comprised of student achievement and ADA. As can be seen in the table, the My School sub-scales of Satisfaction, Difficulty, and Cohesiveness contribute the most to the canonical correlation (R_c=.90) between the two measures. When combined with data derived from correlating the subtests of the ITBS and average daily attendance figures with the My School variate, the analyses indicated that elementary student perceptions of greater Difficulty, Satisfaction, and Cohesiveness were associated with lower student achievement and school ADA.

Table 40 summarizes the product-moment correlations between the original School Survey sub-scale scores and the student outcome canonical variate comprised of student achievement and ADA for the first and second significant canonical relationships. The correlations in the table indicate that the School

TABLE 39

Summary of the Product-Moment Correlations Between the Original My School Dimension Scores and Student Outcome Canonical Variate

My School Dimensions	Student Outcome Variate
Satisfaction	.37*
Friction	-.03
Competitiveness	-.02
Difficulty	.69*
Cohesiveness	.43*

*p<.05

TABLE 40

Summary of the Product-Moment Correlations Between the Original _School Survey_ Dimension Scores and Student Outcome Canonical Variates 1 and 2

School Survey Dimensions	Student Outcome Variate 1	Student Outcome Variate 2
Administrative Practices	.58*	-.04
Professional Work Load	.47*	.05
Non-Professional Work Load	.36*	.01
Materials and Equipment	.36*	-.04
Buildings and Facilities	.53*	-.15
Educational Effectiveness	.85*	.10
Evaluation of Students	.68*	.34*
Special Services	.57*	-.10
School Community Relations	.43*	.03
Supervisory Relations	.38*	-.10
Colleague Relations	.56*	-.05
Voice in Educational Program	.65*	-.24
Performance and Development	.43*	-.23
Financial Incentives	.35*	-.26

*$p<.05$

Survey sub-scales of Educational Effectiveness (.85), Evaluation of Students (.68), and Voice in Educational Program (.65) contribute the most to the first significant canonical relationship (R_c=.9[illegible]). It might be noted however, that all of the School Survey sub-scales were significantly correlated ($p<.05$) with the student outcome variate. For the second significant canonical relationship (R_c=.81), only the Evaluation of Students sub-scale of the School Survey was significantly correlated with the student outcome canonical variate. When combined with data derived from correlating the student achievement and ADA scores with the canonical variate of the School Survey for the first and second canonical correlations, the results indicated that the more positive elementary teachers' perceptions of the school working environment, particularly with regard to educational effectiveness, methods for evaluating students, and voice in determining educational programs of the school, the higher school performance will be in student achievement. In addition, data resulting from an analysis of the second canonical correlation indicated that the more positive teachers' are about the manner in which their schools evaluate students, the higher school average daily attendance.

Besides establishing and interpreting multivariate relationships between the mediating variables of teacher and student perceptions of school environment characteristics and student outcome measures, Perkins (1976) conducted a partial canonical analysis of student perceptions and student outcomes by removing teacher perception variance from each of these measures. The statistical process was one of computing canonical correlations between residual scores for the My School sub-scales and student achievement and school ADA having first removed these measures' common variance with the School Survey sub-scales.

The partial canonical correlation analysis between residuals of the My School factors and student outcome measures yielded one significant ($p<.05$)

canonical coefficient of $R_c = .81$. The Bock (1975) procedure was again employed to better understand the contribution of the subsets of variables to the one significant canonical correlation. Table 41 summarizes the product-moment correlations between the residual My School dimensions scores and student outcome canonical variate for the significant canonical correlation. As can be seen in the table, the sub-scales of Satisfaction, Difficulty, and Cohesiveness best identified the My School variate. When combined with data derived from correlating the student outcome measures with the canonical variate of the My School, the results indicated that elementary student perceptions of greater satisfaction, difficulty, and cohesiveness are associated with generally lower student achievement. This finding held even when common variance between teacher and student perceptions and student outcomes was statistically controlled. Thus, the interpretation of the findings for the My School instrument and student outcomes provided above can be made without concern for the relationship of teacher perceptions to these two measures.

Conclusions

The general conclusions resulting from the canonical and partial canonical analyses of relationships between teacher and student perceptions of characteristics of the school working and learning environment and student achievement and average daily attendance in 42 elementary schools in the State of Georgia (Perkins, 1976) are summarized below.

1) There is a positive relationship between teachers' perceptions of the school environment and students' academic achievement or performance. This conclusion was based on the finding of two significant canonical relationships which suggested the following: a) the more positive teachers' perceptions of the school environment with regard to educational effectiveness and methods for

TABLE 41

Summary of the Product-Moment Correlations Between the Residual _My School_ Dimension Scores and Student Outcome Partial Canonical Variate

My School Dimensions	Student Outcome Variate
Satisfaction	.44*
Friction	-.19
Competitiveness	-.19
Difficulty	.52*
Cohesiveness	.56*

$^{*}p<.05$

evaluating students, the higher the average school performance on general achievement measures; and b) the more positive teachers' perceptions of the measures and methods used in the school for evaluating students, the higher the average daily attendance of a school.

2) There is a significant multivariate relationship between students' perceptions of the school climate/environment and their overall school performance. This conclusion was based on the finding of one significant canonical relationship which, when interpreted, implied that the more difficulty, satisfaction, and cohesiveness students perceive in the school environment, the lower the school's performance on traditionally used achievement measures.

3) There is a positive relationship between teachers' perceptions of the school environment and students' perceptions of the school environment. Interpretation of the canonical relationship established for these teacher and student perceptions suggested that schools in which teachers feel that the academic program is effective, appropriate methods for evaluating students exist, supervisory and colleague relations are good, and opportunities to develop and improve their own performance exist, students perceive the school learning climate as less difficult, generally more satisfying, and cohesive with generally less friction among classmates.

4) There is a significant multivariate relationship between students' perceptions of the school environment and students' academic performance when the effect of teachers' perceptions of the school environment have been removed. The one significant canonical correlation that served as a basis for this finding suggested that the more satisfaction, cohesiveness, and difficulty a school is perceived as having by elementary students, the lower the school's performance on standardized achievement measures.

Multivariate Relationships Between Teachers' Assessments of Principals' Competencies (Performances) and Teachers Perceptions of Dimensions of Their Working Environment

Using a sample of 958 teachers in 42 elementary schools from the R.O.M.E. data base, Pool (1976) examined the multivariate relationships between elementary teachers' assessments of the frequency and effectiveness with which principals carry out a wide variety of performances (competencies) in their schools and these same teachers' perceptions of various dimensions of their working environment. The principal competency assessment device used was the Principal Performance Description Survey - Teacher Form I instrument developed within Project R.O.M.E. The School Survey was used as a measure of teachers' perceptions of school working environment characteristics. The statistical technique employed to analyze the teacher responses to the two instruments was canonical correlation analysis. A brief description of results derived from the canonical analyses that serves to highlight the multivariate relationships between the PPDS - Teacher Form I and School Survey instruments is provided below. A much more detailed description of the research can be found in Pool (1976).

The results of the canonical correlation analysis of the PPDS - Teacher Form I Functional Areas of Administrative Responsibility "composites" (both frequency and effectiveness of performance ratings) and factors of the School Survey is presented in Table 42. The data in the table indicate that two significant canonical relationships were found for the frequency of performance PPDS ratings canonical variate and the School Survey factors (.879 and .799), and two for the effectiveness of performance ratings and the School Survey factors (.895 and .816). Thus the correlations between the linear functions of the PPDS - Teacher Form I Functional Areas of Administrative Responsibility composites (both frequency and effectiveness ratings) as independent variable sets, and the School Survey factors as a dependent variable set, were most en-

TABLE 42
Summary of Significant Canonical Correlation Coefficients (R_c) and Chi Square (χ^2) Analyses for the School Survey Factors and PPDS - Teacher Form Composites
(Frequency and Effectiveness Ratings)
By Functional Areas of Administrative Responsibility
(n=42 Elementary Schools)[1]

			Frequency Ratings		
Vector	R_c	Wilk's Lambda	χ^2	d.f.	p
1	.879	.013	138.04	84	.001
2	.799	.055	91.46	65	.015

			Effectiveness Ratings		
Vector	R_c	Wilk's Lambda	χ^2	d.f.	p
1	.895	.012	139.68	84	.001
2	.816	.060	88.83	65	.024

[1] Based on a total sample of 958 teachers using school means as the unit of analysis.

couraging. These findings support the strong global relationships between teachers' ratings of the frequency and effectiveness with which principals carry out a wide variety of performances classified by Functional Areas of Administrative Responsibility and teachers' perceptions of multiple characteristics of their working (school) environment.

To interpret the relative contributions of the PPDS - Teacher Form I and School Survey instrument sub-scales to the primary canonical coefficient, Pool (1976) utilized the Bock (1975) procedure of correlating the original variables of one canonical variate with the canonical variate score (composite) of the opposite variate. Table 43 presents a summary of the canonical variate/sub-scale intercorrelations for the School Survey and the PPDS - Teacher Form I composites by Functional Areas of Administrative Responsibility (frequency ratings) for the primary (first and highest) canonical correlation. The figures in the top half of the table represent product-moment correlations derived from correlating each of the School Survey factors (sub-scales) with the canonical variate composite score of the PPDS - Teacher Form I instrument. As can be seen in the table, nine of the 14 possible intercorrelations were statistically significant at the .01 level. In addition, all of the correlations were negative in direction and moderate in magnitude. The School Survey factors contributing most highly to the first canonical relationship between the two instruments were Performance and Development (-.72), Voice in Educational Program (-.60), Financial Incentives (-.53), and Administrative Practices (-.51). It appears that elementary teachers' attitudes towards these dimensions of their working environment are inversely related to the frequency with which they perceive principals performing activities comprising the PPDS - Teacher Form I instrument.

The bottom half of Table 43 summarizes the intercorrelations between the PPDS - Teacher Form I Functional Areas of Administrative Responsibility compo-

TABLE 43

Canonical Variate/Scale Intercorrelations for the School Survey and the PPDS - Teacher Form Composites by Functional Areas of Administrative Responsibility (Frequency Ratings) for the Primary Canonical Relationship (n=42 elementary schools)[1]

School Survey Factors	PPDS Variate (R_C=.879*)
1. Administrative Practices (9)[2]	-.51*
2. Professional Work Load (9)	-.14
3. Non-professional Work Load (6)	-.21
4. Materials and Equipment (8)	-.46*
5. Buildings and Facilities (7)	-.29
6. Educational Effectiveness (10)	-.39
7. Evaluation of Students (10)	-.39
8. Special Services (8)	-.44*
9. School-Community Relations (7)	-.44*
10. Supervisory Relations (10)	-.49*
11. Colleague Relations (7)	-.43*
12. Voice in Educational Program (8)	-.60*
13. Performance and Development (10)	-.72*
14. Financial Incentives (9)	-.52*

PPDS - Teacher Form Composites by Functional Areas of Responsibility	School Survey Variate (R_C=.879*)
1. Curriculum and Instruction (35)[2]	-.71*
2. Staff Personnel (40)	-.78*
3. Pupil Personnel (17)	-.73*
4. School-Community Interface (1)	-.39
5. Fiscal Management (9)	-.52*
6. System-wide Policies and Operations	-.67*

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[1] Based on a sample of 958 teachers using school means as the unit of analysis.

[2] Number of items in composite.

* Correlations significantly different from zero, $p<.01$.

sites (frequency ratings) and the School Survey variate derived from the first and primary canonical correlation (R_c=.879). Again, all of the possible intercorrelations were negative in direction and moderately strong in magnitude. Five of the six possible intercorrelations were statistically significant at the .01 level. The PPDS - Teacher Form I composites contributing most highly to the canonical relationship between the two instruments were Staff Personnel (-.78), Pupil Personnel (-.73), Curriculum and Instruction (-.71), and System-Wide Policies and Operations (-.67). An interpretation of these correlations similar to that for the top half of the table was made.

Table 44 presents a summary of the canonical variate/sub-scale intercorrelations derived from the Bock (1975) procedure for the two instruments for effectiveness of performance PPDS - Teacher Form I ratings for the first and primary canonical correlation (R_c=.895). When the School Survey sub-scale scores were correlated with the PPDS variate, 8 of the possible intercorrelations were statistically significant at the .01 level. All of the correlations were again negative in direction and moderate in magnitude, except for the Performance and Development (-.79) School Survey scale. The School Survey factors contributing most highly to the primary canonical relationship between the two instruments were Performance and Development (-.79), Voice in Educational Program (-.64), and Supervisory Relations (-.58). It appears that elementary teachers' attitudes towards these dimensions of their working environment are inversely related to the effectiveness with which they perceive principals as performing a wide variety of functions in the school context.

Data reported in the bottom half of Table 44 summarize the product-moment correlations between the PPDS - Teacher Form I Functional Areas of Administrative Responsibility (effectiveness ratings) composites and the School Survey variate derived from the first and primary canonical correlation between the

TABLE 44

Canonical Variate/Scale Intercorrelations for the School Survey and the PPDS - Teacher Form Composites by Functional Areas of Administrative Responsibility (Effectiveness Ratings) for the Primary Canonical Relationship (n=42 elementary schools)[1]

School Survey Factors	PPDS Variate (R_c=.895*)
1. Administrative Practices (9)[2]	-.51*
2. Professional Work Load (9)	-.13
3. Non-professional Work Load (6)	-.32
4. Materials and Equipment (8)	-.43*
5. Buildings and Facilities (7)	-.31
6. Educational Effectiveness (10)	-.36
7. Evaluation of Students (10)	-.34
8. Special Services (8)	-.51*
9. School-Community Relations (7)	-.43*
10. Supervisory Relations (10)	-.58*
11. Colleague Relations (7)	-.43*
12. Voice in Educational Program (8)	-.64*
13. Performance and Development (10)	-.79*
14. Financial Incentives (9)	-.39

PPDS - Teacher Form Composites by Functional Areas of Responsibility	School Survey Variate (R_c=.895*)
1. Curriculum and Instruction (35)[2]	-.79*
2. Staff Personnel (40)	-.79*
3. Pupil Personnel (17)	-.73*
4. School-Community Interface (1)	-.55*
5. Fiscal Management (9)	-.46*
6. System-wide Policies and Operations (15)	-.79*

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[1] Based on a sample of 958 teachers using school means as the unit of analysis.

[2] Number of items in composite

* Correlation significantly different from zero, $p<.01$.

two instruments (R_c=.895). Again, all the possible correlations were negative in direction and moderate in magnitude. The PPDS - Teacher Form I composites contributing most highly to the primary canonical relationship were Curriculum and Instruction, Staff Personnel, System-Wide Policies and Operations (all -.79), and Pupil Personnel (-.73). These data indicate that elementary teachers' assessments of the effectiveness with which principals perform a variety of competencies (performances) classified by Functional Areas of Administrative Responsibility are inversely related to their general work attitude as measured by the School Survey.

It will be recalled that an original bivariate classification system was used for the 338 items comprising the PPDS - Teacher Form I instrument (Functional Areas of Administrative Responsibility and Administrative Operations). Thus, the PPDS instrument yields two sets of sub-scale scores depending upon the item classification used in aggregating and scoring the instrument. Table 45 summarizes the results of canonical correlation analyses of the PPDS - Teacher Form I Administrative Operations composites for both frequency and effectiveness of performance ratings, and factors of the School Survey. Two significant canonical correlations were found for the PPDS Administrative Operations frequency ratings and factors of the School Survey (.878 and .836), and one was found for the PPDS Administrative Operations effectiveness ratings and factors of the School Survey (.893).

To interpret these canonical coefficients in terms of the relative contribution of the two instruments' sub-scales, the Bock (1975) procedure was again employed. Table 46 summarizes the vector (linear function) sub-scale intercorrelatons for the School Survey and the PPDS - Teacher Form I Administrative Operations composites (frequency ratings) for the first and primary canonical correlation (R_c=.878). As can be seen in the top half of the table, 7 of the 14 pos-

TABLE 45
Summary of Significant Canonical Correlation Coefficients (R_c) and Chi Square (χ^2) Analyses for the School Survey Factors and PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) By Administrative Operations (n=42 Elementary Schools)[1]

			Frequency Ratings		
Vector	R_c	Wilk's Lambda	χ^2	d.f.	p
1	.878	.213	123.18	70	.001
2	.836	.093	76.02	52	.017

			Effectiveness Ratings		
Vector	R_c	Wilk's Lambda	χ^2	d.f.	p
1	.893	.024	119.35	70	.001

[1] Based on a total sample of 958 teachers using school means as the unit of analysis.

TABLE 46

Vector/Scale Intercorrelations for the School Survey and the PPDS - Teacher Form Composites by Administrative Operations (Frequency Ratings) for the Primary Canonical Relationship (n=42 elementary schools)[1]

School Survey Factors	PPDS Variate (R_C=.878*)
1. Administrative Practices (9)[2]	.67*
2. Professional Work Load (9)	.51*
3. Non-professional Work Load (6)	.34
4. Materials and Equipment (8)	.48
5. Buildings and Facilities (7)	.45
6. Educational Effectiveness (10)	.30
7. Evaluation of Students (10)	.30
8. Special Services (8)	.59*
9. School-Community Relations (7)	.60*
10. Supervisory Relations (10)	.16
11. Colleague Relations (7)	.45
12. Voice in Educational Program (8)	.57*
13. Performance and Development (10)	.55*
14. Financial Incentives (9)	.65*

PPDS - Teacher Form Composites by Administrative Operations	School Survey Variate (R_C=.878*)
1. Data Collection (13)[2]	.47
2. Planning (7)	.37
3. Communicating (74)	.52*
4. Implementing (21)	.67*
5. Evaluating (2)	.37

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[1] Based on a sample of 958 teachers using school means as the unit of analysis.

[2] Number of items in composite.

* Correlation significantly different from zero, p<.01.

sible School Survey factor/PPDS variate intercorrelations were statistically significant at the .01 level. All of the correlations were positive in direction and moderate in magnitude. The School Survey factors contributing most highly to the canonical relationship between the two instruments were Professional Work Load (.67), Financial Incentives (.65), and School Community Relations (.60). These data demonstrate that elementary teachers' attitudes towards these dimensions of their working (school) environment are positively related to the frequency with which they rate principals as performing a wide variety of competencies (performances) classified by Administrative Operations.

Correlations in the bottom half of Table 46 are for the PPDS - Teacher Form I Administrative Operations composites (frequency ratings) and the School Survey canonical variate derived from the first and primary canonical correlation (R_c=.895). Again, all of the intercorrelations were positive in direction and moderate in magnitude. Two of the five possible intercorrelations were statistically significant at the .01 level. The PPDS - Teacher Form I Administrative Operations composites contributing most highly to the primary canonical correlation between the two instruments were Implementing (.67), and Communicating (.52). These data indicate that elementary teachers' assessments of the frequency with which principals perform competencies classified by Administrative Operations are positively related to their general attitude toward the school environment as measured by a linear function of the School Survey subscales.

Table 47 presents the canonical variate/sub-scale intercorrelations for the primary and only canonical correlation (R_c=.893) between the PPDS - Teacher Form I Administrative Operations composites (effectiveness ratings) and subscales of the School Survey. The correlations in the top half of the table indicate that only 4 of the possible School Survey factor/PPDS Administrative

TABLE 47

Vector/Scale Intercorrelations for the School Survey and the PPDS - Teacher Form Composites by Administrative Operations (Effectiveness Ratings) for the Primary Canonical Relationship (n=42 elementary schools)[1]

School Survey Factors	PPDS Variate (R_c=.893*)
1. Administrative Practices (9)[2]	.17
2. Professional Work Load (9)	-.06
3. Non-professional Work Load (6)	.17
4. Materials and Equipment (8)	.23
5. Buildings and Facilities (7)	.10
6. Educational Effectiveness (10)	.43*
7. Evaluation of Students (10)	.34
8. Special Services (8)	.35
9. School-Community Relations (7)	.06
10. Supervisory Relations (10)	.62*
11. Colleague Relations (7)	.31
12. Voice in Educational Program (8)	.41*
13. Performance and Development (10)	.54*
14. Financial Incentives (9)	.04

PPDS - Teacher Form Composites by Administrative Operations	School Survey Variate (R_c=.893*)
1. Data Collection (13)[2]	.67*
2. Planning (7)	.78*
3. Communicating (74)	.67*
4. Implementing (21)	.61*
5. Evaluating (2)	.56*

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[1] Based on a sample of 958 teachers using school means as the unit of analysis.

[2] Number of items in composite.

* Correlation significantly different from zero, $p<.01$.

Operations canonical variate correlations were statistically significant ($p<.01$). All of the correlations were positive in direction and ranged in magnitude from .41 to .62. The School Survey factors contributing most highly to the only canonical coefficient were Supervisory Relations (.62), Performance and Development (.54), Educational Effectiveness (.43), and Voice in Educational Program (.41). Apparently, teachers' attitudes towards these dimensions of their working environment are positively related to their assessments of the effectiveness with which principals perform a variety of competencies classified by Administrative Operations.

Correlations in the bottom half of Table 47 are for the PPDS - Teacher Form I Administrative Operations composites (effectiveness ratings) and the canonical variate of the School Survey derived from the primary canonical correlation ($R_c=.893$) between the two instruments. All of the possible correlations were statistically significant at the .01 level, were positive in direction, and relatively high in magnitude, ranging from .56 to .78. The outstanding Administrative Operations composite contributing to the canonical relationship was the Planning classification of competencies (.78). These data well indicate that elementary teachers' assessments of the effectiveness with which their principals perform a variety of activities classified by Administrative Operations are positively, and significantly related to their global attitudes towards the school work environment as measured by the best linear combination of the School Survey sub-scales.

Conclusions

The process of computing canonical correlation coefficients between the possible combinations of the Principal Performance Description Survey - Teacher Form I composites and rating scales, and dimensions of the School Survey, yielded some highly interesting multivariate relationships between the two GPAS instruments. Major findings from the canonical analyses and canonical variate/instrument sub-scale correlations are summarized below.

1) Regardless of the type of competency (principal performance) rating (either frequency or effectiveness of performance), or the type of competency statement classification system imposed for instrument development (either Functional Areas of Administrative Responsibility or Administrative Operations), highly significant canonical correlations between the PPDS - Teacher Form I and School Survey instruments were found.

2) One outstanding finding of the multivariate analyses bearing on the classification schema of the competency statements was that all canonical variate/sub-scale intercorrelations for the PPDS - Teacher Form I composites by Functional Areas of Administrative Responsibility and the School Survey dimensions were negative, while those for the Administrative Operations classification of performance statements were all positive.

3) The overall findings for the canonical analyses performed suggested that strong primary, and in some cases secondary, relationships exist between elementary teachers' assessments of principals' competencies (performances) in a wide variety of areas and these same teachers' attitudes towards multiple characteristics of their working (school) environment. The specific direction of these relationships (whether positive or negative) seems to vary with the particular competency classification used in scoring the PPDS - Teacher Form I instrument.

4) The School Survey instrument appears to be a most predictable mediating criterion variable measure...one showing strong, though complex, multivariate relationships to teachers' assessments of principals' performances.

Chapter V

PARAMETERS AND USES OF A PROTOTYPE ADMINISTRATION, SCORING, AND TECHNICAL MANUAL FOR THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM (GPAS)

The eventual, long-range goal of the Project R.O.M.E. assessment component at the University of Georgia is to produce through field-based research a set of practically administered procedures that will measure principal competencies (performances) that have been demonstrated to be related to meaningful school criterion variables. Thus, the basic research and development objectives of R.O.M.E. assessment personnel are to 1) develop a set of professionally verified competencies and competency indicator statements, 2) validate these competencies and indicators against school outcomes through field-based research, 3) select a final set of competencies as "content" for a final form of competency assessment instruments, and 4) design an administration and scoring manual and system useful to the State Department of Education, local public schools, and LEA's.

The first of these assessment objectives has been accomplished, and the second has been completed for some 338 indicators of principal competence. With the addition of data to be collected during the coming (1976 - 1977) project year to the R.O.M.E. data base, the first three objectives should be well in hand. A large amount of effort will, of necessity have to be given to A) establishing validity coefficients for a second set (n=273) of principal performance statements through field testing the GPAS in approximately 35 more public schools, and to B) final item selection for instrument development based on validity coefficients established for 611 principal performance indicators of 80 competency statements. Once these tasks are completed, a final form of the Principal Performance Description Survey instruments will be developed to contain only those statements of principal performance having known and significant correlations with educationally-relevant teacher and student variables.

As the Georgia Principal Assessment System has evolved over the past two years, instruments not directly related to assessing principals' competencies and school performances have been included in field testing (e.g., the School Survey, My School, and Learning Environment Inventory). This has been necessary to collect data vital to the competency validation effort. Subsequent research and development activities with these teacher and student instruments has seemingly demonstrated their value for general school assessment purposes. It is expected that the instruments can play an important part in local school needs assessment and problem-identification programs, and in the state's mission to carry out needs-based staff development activities. Therefore, it seems likely that these instruments should remain part of a total, semi-comprehensive assessment system stemming from the R.O.M.E. Project, since they yield information meaningful within the school environmental context. The support for the continued usefulness of these instruments comes from studies demonstrating their relationships to school outcome variables (e.g., student achievement and school average daily attendance).

The final R.O.M.E. assessment objective (#4 above) is directly dependent upon processes and products related to accomplishing objective number 3. However, some consideration can be given, and projections can be made concerning the structure of a prototype administration, scoring, and technical manual for the complete Georgia Principal Assessment System. These projections are of necessity subject to change because of the nature of the multiple activities involved in accomplishing objective number 3 above, and because of the continuing "developmental" nature of the R.O.M.E. assessment effort. However, a general description of the contents of a prototype assessment manual can be given.

The outline below lists major categories that might be included in an administration, scoring, and technical manual for the complete GPAS. It seems that such a manual would be rather lengthy, but would have several advantages over the many others developed for various assessment instruments in education. The first of these is the selective nature of the variety of instruments included in the GPAS. Secondly, the manual can emphasize potential "uses" of the data derived from each instrument, through a variety of procedures, to fit the local school needs. These procedures have, as yet, not been specified. However, many suggested in-service and staff development activities can be developed using the R.O.M.E. research findings as a general data base and guide. One of these ongoing developments, for example, has been the Valdosta State FOCUS field-based training "package" for school administrators. Thirdly, the assessment manual will be presented in such a way that local school personnel should be able to administer, score, and interpret data for any of the instruments. This characteristic has many advantages, including cost-effective ones, over the traditional scoring of assessment instruments by large testing corporations.

An outline for the contents of the comprehensive GPAS administration, scoring, and technical manual is provided below. The reader should remember that the outline is a "projection" and is therefore tentative. In addition, a final form of such a manual would have many sub-headings listed under the major content categories.

Title

The Assessment of Principal Competencies and Teacher and Student Perceptions of Characteristics of the School Working and Learning Environment: A Manual for the Administration, Scoring, and Use of the Georgia Principal Assessment System (GPAS)

Contents

INTRODUCTION

General Information About the GPAS and its Development
Purposes of Administering the GPAS
Audience for Which the GPAS is Intended
Potential Uses of the GPAS in Meeting Local School Needs

THE ASSESSMENT OF PRINCIPAL COMPETENCIES

The Principal Performance Description Survey - Principal Form

Instrument Development, Description, and Research
Reliability
Validity
Scale Norms
Administration Procedures
Scoring and Reporting
Suggested Uses

The Principal Performance Description Survey - Teacher Form

Instrument Development, Description, and Research
Reliability
Validity
Scale Norms
Administration Procedures
Scoring and Reporting
Suggested Uses

The Principal Performance Description Survey - External Observer Form

Instrument Development, Description, and Research
Reliability
Validity
Scale Norms
Administration Procedures
Scoring and Reporting
Suggested Uses

The Principal Performance Description Survey - Student Form

Instrument Development, Description, and Research
Reliability
Validity
Scale Norms
Administration Procedures
Scoring and Reporting
Suggested Uses

The Principal Performance Description Survey - Central Office Form
- Instrument Development, Description, and Research
- Reliability
- Validity
- Scale Norms
- Administration Procedures
- Scoring and Reporting
- Suggested Uses

THE ASSESSMENT OF TEACHER PERCEPTIONS OF DIMENSIONS OF THEIR WORKING (SCHOOL) ENVIRONMENT

The School Survey
- Instrument Development, Description, and Research (Long Form)
- Instrument Development, Description, and Research (Short Form)
- Reliability
- Validity
- Scale Norms
- Administration Procedures
- Scoring and Reporting
- Suggested Uses

THE ASSESSMENT OF ELEMENTARY STUDENT PERCEPTIONS OF CHARACTERISTICS OF THE SCHOOL CLIMATE

The My School Inventory
- Instrument Development, Description, and Research
- Reliability
- Validity
- Scale Norms
- Administration Procedures
- Scoring and Reporting
- Suggested Uses

THE ASSESSMENT OF SECONDARY STUDENT PERCEPTIONS OF CHARACTERISTICS OF THE SCHOOL CLIMATE/LEARNING ENVIRONMENT

The Learning Environment Inventory
- Instrument Development, Description, and Research (Long Form)
- Instrument Development, Description, and Research (Short Form)
- Reliability
- Validity
- Scale Norms
- Administration Procedures
- Scoring and Reporting
- Suggested Uses

GENERAL REFERENCES

INSTRUMENT APPENDIX

ITEM LOCATION INDEX

User Information

The sections that follow provide a brief description of the general kinds of information that most probably will be included in the assessment manual under each of the subheadings listed above for each assessment instrument.

Instrument Development, Description, and Research

Users of the assessment system should be provided information basic to understanding the research and development activities concerning the origin and structure of each instrument. This section of the manual would include a description of 1) processes related to item selection for instrument development, 2) structure of instrument sub-scales and their general definitions and "meaning," 3) the response format for those responding to the instrument, 4) research completed with the instrument, 5) the general purpose for which the instrument was developed and is intended to be used.

Reliability

Basic data related to the established reliability characteristics of the instrument should be discussed to provide the user with information about 1) the "stability" of instrument scores over time (test-retest coefficients) and the consistency with which those taking the instrument respond to the instrument items and sub-scales (internal consistency coefficients). These data would ideally be provided for the full instrument, and well as for instrument sub-scales where appropriate.

Validity

Information related to the ability of the instruments to measure what they were designed to measure (content validity), and to predict meaningful school outcomes (predictive validity) would be provided potential users in this section of the manual. A description of general predictive validity coefficients established for each instrument would be the most important part of this section.

Scale Norms

This section of the manual would provide users of the assessment system with descriptive data summaries for each instrument (means and standard deviations) derived from the R.O.M.E. data base, and from other large data bases for certain instruments. These data are necessary to provide a standard against which the performance of principals, teachers, and students, etc., can be compared. Ideally both elementary and secondary school norms would be included.

Administration Procedures

Those using the assessment system or any of its separate components should be provided with general information related to instrument administration procedures such as 1) time of administration, 2) place of administration, 3) special instructions such as controlling for reading difficulty, 4) training of personnel to administer certain instruments such as the PPDS - External Observer Form, 5) testing conditions desired, 6) the importance of maintaining anonymity for certain instruments and respondents, etc.

Scoring and Reporting

After assessment instruments have been administered and data collected, those implementing the assessment system will have to know how to score each instrument and interpret obtained scores. This section of the manual would explain these procedures for each instrument, and would provide instructions for using the Item Location Index developed for each instrument. In addition, since several different scores can be derived for the various PPDS forms, this section would include a description of the mechanics of deriving these scores, and their meaning. Suggestions should also be provided concerning how a given school system might construct a "competency profile" for principals by combining data from a variety of competency assessment sources.

Suggested Uses

The ultimate goal of administering the Georgia Principal Assessment System (GPAS) is to provide information to schools and school systems relevant to 1) school evaluation, 2) staff development, 3) principal competency assessment, 4) in-service training, 5) needs assessment, 6) setting school objectives, or 7) some combination of these. This section of the report should define general parameters of the data yielded by the various GPAS instruments in terms of each of these possible uses. In addition, suggestions concerning the practical use of assessment data in structuring certain "action plans" to be carried out in a school should be provided. This will allow those using the system to better understand the variety of ways in which the assessment data can be utilized. The exact nature of specific "action plans" relevant to a variety of assessment objectives and results has not been, as yet, worked out. However the ultimate utility of the assessment system probably lies in providing schools, LEAs, and the State Department of Education with data useful in determining programs to be implemented in schools, and in affecting more objective decision-making in education.

Summary

As previously mentioned, the administration, scoring, and technical manual for the GPAS outlined above would be rather lengthy, and might best be divided into a set of interrelated, sequenced manuals for the various instruments in the system. However, the content outlined in the prototype manual explicated above is essential to both understanding instrument development and psychometric characteristics, and to successfully using the assessment system. With the addition of field-test data to the R.O.M.E.

data base during the coming year, and subsequent item and scale validation research, a final form of the assessment system that is "transportable" should be successfully completed in the near future.

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